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International Electrotechnical Commission.

Commission Electrotechnique Internationale.

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RATING OF ELECTRICAL MACHINERY AND APPARATUS.

In accordance with the decisions of the I.E.C. at its Plenary Meeting held in Berlin in September 1913, the Central Office begs to submit herewith to the National Committees the report presented to that Meeting.

The text *not* in italics was definitely adopted at Berlin and will form the subject of a separate publication of the Central Office, which will be issued after approval by the small Editing Committee.

The text printed in italics and enclosed in brackets was referred back for the further consideration of the National Committees with the request that they inform the Central Office of their opinion on the important points referred to therein, within one year, with a view of a definite decision being officially adopted at San Francisco in 1915.

CENTRAL OFFICE, *December*, 1913.

SPÉCIFICATIONS DES MACHINES ET APPAREILS ÉLECTRIQUES.

Suivant les décisions de la C. E. I. prises dans sa réunion plénière tenue à Berlin en septembre 1913, le Bureau central a l'honneur de soumettre aux Comités nationaux le rapport ci-inclus présenté à la susdite réunion.

Le texte *non* en italiques a été adopté définitivement à Berlin et fera l'objet d'un fascicule séparé du Bureau central, qui paraitra après avoir eu l'approbation de la sous-commission de rédaction.

Le texte imprimé en italiques entre parenthèses est renvoyé à l'étude des Comités nationaux en les priant de bien vouloir transmettre au Bureau central, dans le délai d'un an, leurs opinions relatives aux questions y contenues, en vue d'une décision définitive à San Francisco en 1915.

BUREAU CENTRAL, *décembre*, 1913.

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1(Suisse)102

2 - MAY 15
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Juin 1951

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 1: NOMENCLATURE

Remarques et suggestions du
Comité Electrotechnique Suisse concernant les définitions
données dans le document 1(Secrétariat)210

Remarque générale: Faire concorder le document 1(Secrétariat)210 avec le document 22(Secrétariat)6 de janvier 1949.

Titre: Modifier le titre comme suit: "Convertisseurs électroniques et ioniques". Assimiler le titre anglais et français.

Page 2

SOUPAPE IONIQUE: Compléter le texte comme suit:
...contenant un gaz ou une vapeur ou les deux dont....

SOUPAPE SECHE:
SOUPAPE ELECTROLYTIQUE:) Remplacer le mot "dissymétrique" par "asymétrique".

CONVERTISSEUR A VAPEUR DE MERCURE: Compléter comme suit:
...à vapeur de mercure (N°) ev. avec atmosphère de gaz rare

Page 3

CONVERTISSEUR MECANIQUE: Supprimer le mot "statique" dans la définition.

Page 4

CUVE DE SOUPAPE: Remplacer cette expression par "CUVE ou AMPOULE DE SOUPAPE". Ecrire dans la définition "Récipient en acier ou en verre" au lieu de "Enveloppe".

ENTRETIEN (ou EXCITATION): Supprimer la parenthèse séparant les mots "EXCITATION" ou "ENTRETIEN".

ANODE D'ENTRETIEN: Compléter cette expression par: ...ET D'EXCITATION.

Page 5

Compléments: Nous proposons d'insérer les couplages définis en page 2. En outre, l'expression ROBINET à VIDE est à définir.

VACUOMETRE: Nous renvoyons à la norme américaine ASA C 42-1941,

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1(Sweden)205

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.1 : NOMENCLATURE

2 - MAY 15
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Definitions relating to transductors

Proposal by the Swedish National Committee
regarding terms to be included in the new edition of the
International Electrotechnical Vocabulary

I. GENERAL TERMS

1.1 - Transductor	Device consisting of one or more ferromagnetic cores with windings, and by means of which an A.C. voltage or current can be varied by a D.C. voltage or current, utilizing saturation phenomena in the core material.
1.2 - Transductor element	One of the cores with windings constituting the transductor. More than one transductor element may be built together, so that parts of their magnetic circuits are common (e.g. three-legged core).
1.3 - Ideal transductor	An imaginary transductor, where the magnetizing curve of each element consists of straight lines, one vertical representing infinite permeability and two horizontal representing positive and negative saturation.
1.4 - Power winding (A.C. winding)	A winding of a transductor element through which the load current flows.
1.5 - Input power winding	The power winding to which power is supplied from an A.C. source.
1.6 - Output power winding	The power winding from which power is delivered to the load. In most practical cases one and the same winding serves as input and output power winding.
1.7 - Excitation winding (D.C. winding)	A winding of a transductor element by means of which a unidirectional magnetomotive force is applied to the core.
1.8 - Control winding	An excitation winding by means of which the output power is controlled from outside.
1.9 - Bias winding	An excitation winding by means of which the operating condition is displaced by an arbitrary amount.
1.10 - Self excitation winding	An excitation winding by means of which self-excitation is obtained (see 2.8).
1.11 - Absorbed voltage	The voltage which is absorbed by the transductor in a circuit.
1.12 - Element voltage	The voltage which is absorbed by a transductor element.
1.13 - Output voltage	The voltage which is transferred to the load in a circuit comprising a transductor.

01(Central Office)224 November, 1954

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Report of the Golden Jubilee Meeting
held in Philadelphia, Pa., U.S.A.
1st-16th September, 1954.

The 1954 General Meeting of the IEC, at which the Golden Jubilee of the IEC was also celebrated, was held at the University of Pennsylvania, Philadelphia, U.S.A., from September 1st-16th, 1954. It was attended by about 900 delegates from the 20 following countries:- Argentina, Australia, Belgium, Canada, Denmark, Finland, France, German Federal Republic, India, Israel, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, United States of America, Yugoslavia. Of this number, about 350 came from other countries then the United States. Meetings of 43 Technical Committees and Sub-Committees were held, as well as meetings of the Committee of Action and the Council.

As was fitting for the celebration of such an important event as the Golden Jubilee, the meeting was the largest ever held in the history of the IEC. It is also of interest to note that this was the second time in which a general meeting had been held in the U.S.A.

That such a large meeting was an unqualified success is an indication of the excellent organization that had been set up by the U.S. National Committee, which had spared itself no pains to provide every facility that could be required, for the work of the Technical Committees as well as in the matter of social events and excursions. Mention should also be made of the generous help received from the authorities of the University of Pennsylvania who placed the student's dormitories at the disposal of the delegates at a low charge, as were also the excellent cafeteria and other facilities of Houston Hall, the Student's Union Building. Apart from the financial advantages of such an arrangement which were of great value in view of the dollar restrictions in force in many countries, delegates were able to obtain first hand knowledge of American University life.

An interesting feature of the meeting was the opportunity for several of the delegates to speak on a radio programme, known as "Meet the Engineer", sponsored by the Philadelphia Section of the American Institute of Electrical Engineers.

Welcome

Delegates were welcomed at a short meeting on September 1st by Mr. R.C. Sogge, Chairman of the U.S. National Committee and Dr. H.S. Osborne, President of the IEC.

A welcoming reception was held in the University Museum at which the President of the University of Pennsylvania, Dr. G.P. Harnwell welcomed delegates. The Civic Authorities of Philadelphia were represented, and the President of the ASA, Mr. R.E. Gay, Mr. C.H. Linder, Vice President of the General Electric Co. were also present. Amongst the guests was Dr. Comfort A. Adams, who had addressed the 1904 International Electrotechnical Congress.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMITTEE OF ACTION

2 - MAY 15
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Standardization in the Telecommunications field

At the Philadelphia general meeting, a Sub-Committee, appointed by the Committee of Action (see R.M.329/CA, Page 3, Minute 9), considered a classification of the telecommunications field contained in Document 01(Netherlands)1. It was recommended that this classification (see R.M.329/CA, Page 10, Minute 5), amended by the Netherlands Committee in accordance with the modifications agreed by the Sub-Committee and taking account of the comments submitted by the National Committees, as given in Document 01(Central Office)221A, should be circulated for comment after the Central Office had obtained certain information from other international organizations.

The Central Office accordingly sent copies of the amended classification to other international organizations active in this field, etc, with a request for information on the standardization work they were carrying out or were planning to undertake. A copy of the Central Office letter, together with the replies received from the other international organizations is given in Appendix II of this document.

A detailed analysis of the work being carried out in the telecommunications field by the IEC and the International Radio Consultative Committee (CCIR) is given in Appendix I.

National Committees are requested to submit their comments and proposals for a reorganization of the work of the IEC in the field of telecommunications and electronics, based on the above classification and the other information contained in this report, for presentation to the Committee of Action at their meeting in London in June, 1955.

Any comments and proposals that the National Committees may have for the reorganization of the work of the IEC in this field should reach the Central Office not later than May 31st, 1955.

DRAFT CLASSIFICATION OF THE TELECOMMUNICATION AND ELECTRONIC FIELD

(as revised by the Netherlands Committee in accordance with the decisions of the Committee of Action)

In view of the increasing work relating to standardization in the field of telecommunications and electronics which is being done or may be done in future, by the IEC and other international bodies, it has been thought useful to draw up a broad classification of the field.

This classification is not drawn up on a philosophical basis and does not attempt to define a programme of work. Furthermore, it is appreciated that a classification can be drawn up in many ways, and a classification which is suitable for one purpose may not be suitable for another purpose.

The classification given below is intended only to provide a basis which may assist in deciding upon the committee structure that may be appropriate for dealing with specific items of work, as and when the time is considered ripe for such work to be undertaken.

The classification is based upon the following scheme:-

a) Nomenclature, definitions, symbols
b) Components
c) Communications equipment
d) Applications

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.42: HIGH-VOLTAGE TESTING TECHNIQUE

Comments of the Swedish National Committee
on document 42(Secretariat)1.

Re: Chapter VI - Design, Calibration and Checking of Measuring Apparatus

If the methods for calibration and checking of measuring apparatus given in document 42(Secretariat)1 are accepted, then the Swedish National Committee is of the opinion that this chapter of the document could be expressed in a more concentrated form. Thus the clauses regarding the actual design of measuring apparatus could either be deleted or referred to in an appendix.

The S.N.C. has drafted such a document, a copy of which is enclosed herewith. An appendix (about designs) has not been included in this document but the S.N.C. is quite willing to accept such an appendix.

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42 (Sweden) 1

April 1955

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International Electrotechnical Commission

Technical Committee No.42 High Voltage
Testing Technique

Comments of the Swedish National Committee
on document 42 (Secretariat) 1.

Re: Chapter VII - Standard Sphere Gap

An alternative suggestion made by the Swedish National Committee to Chapter VII in the above-mentioned document is to concentrate on that part of the calibrating range which is known with a reasonable degree of accuracy. Thus the document should only give rules for spacingsup to 50% of the sphere diameter and delete the range between 50 - 100%. (Values between 50 - 75% spacing could be mentioned as reference points but are not to be used for measuring purposes).

The S.N.C. has drafted such a document, which is enclosed herewith, to be used as a basis for discussion.

The reasons for the Swedish opinion are:

- A study of available precision calibration tables for large sphere gap spacings indicates differences which are so large (sometimes exceeding 10%) that a standardised calibration table cannot be presented. This is specially important during tests on apparatus intended for extra-high system voltages, where the insulation margin is generally low and the cost of extra insulation high.
- The precautions which have to be taken, especially regarding the clearances between the spheres and other structures, are so restrictive that these cannot be fulfilled for the very large spheres even in modern laboratories. See, for instance, the table in Clause 74.2, Doc: 42 (Secretariat) 1.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION A.I.E.

TECHNICAL COMMITTEE No.42: HIGH VOLTAGE TESTING TECHNIQUE

Comments of the Swedish National Committee
on document 42(Secretariat)1

2 - SEP 26
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Re: Chapters I - V

Apart from the alterations which may be necessary if Chapter VI is rewritten {see 42(Sweden)2} and apart from minor editing, the Swedish National Committee suggests the following modifications:-

Chapter I - General

10.01 and 10.02: Replace these clauses by:

10.01 Scope and Object of the Specification.

This specification applies to:

- high-voltage D.C. tests
- high-voltage A.C. tests
- high-voltage impulse tests
- high-current impulse tests.

The objects of this specification are:

- to define the terms used in high-voltage testing techniques.
- to describe the methods for generation and measurement of the test voltage.
- to describe the test procedures.
- to recommend methods for calibration and check of the measuring devices.

If the rules in this specification are contradictory to the rules given for a specified type of apparatus, then the latter rules should be followed.

11.01: Replace the term "flashover" by the term "breakdown" wherever possible and define the terms used in this clause.

11.02 - 11.04: Insert a note after these paragraphs as follows:

Note. Acceptance tests should be based on the conventional levels.

11.05 and 11.06: The type of measurement recommended in these clauses cannot be reproduced very well. It is therefore desirable to replace the clause by a recommendation of suitable means for measuring the onset and intensity of corona discharge by a power factor measurement

40-1(Japan)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Japanese National Committee
on Documents 40-1(Secretariat)3 and 40-1(Secretariat)4

40-1(Secretariat)3

We approve this draft subject to modifications.

Opinions:-

1.1 Sometimes metal foils are used to connect the electrodes and the terminals; however, if the foil is so used it is desirable to delete the terms "and without metal foils between these electrodes".

1.3.1 The component ratio of the AC frequency to the DC voltage is obscure as in the case of Document 40-1(Central Office)1, hence it should be distinctly specified as in the note 2 under Clause 1.3.2.

1.7 The temperature coefficients as such numerical value are used often, hence it is desired that the temperature coefficient in the table be supplemented with "+ 0 - 100" and the retrace characteristic with "± (0.1% + 0.1 pF)".

2.2.1 The relation between the second section hereunder and the condition prior to the measurements is not clear, hence it should be distinctly specified.

40-1(Secretariat)4

We approve this draft subject to modifications.

Opinions:-

2. The colours grey and white for the multiplier should be made 10^{-2} for grey and 10^{-1} for white as in Document 12-3(Central Office)3.

Moreover, in the column for the temperature coefficients, "0 to - 100" should be added and the colour code should be made orange.

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40-1(Austria)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Austrian National Committee
on Document 40-1(Secretariat)2.

2.2 - Shaft diameters

Since most European countries have standardized the shaft dimension diameters with 4, 6 and 10 mm, we suggest that besides the American inch-dimensions, European "mm"-dimensions should be inserted.

2.3 - Shaft lengths

No objections so far as "mm" dimensions are concerned.

2.4.2

We agree upon slot dimension width type A: 0.8 mm and depth 1.4 mm and type B: 1.2 mm and 1.6 mm respectively. We also agree upon point 2.4.3.

3.1.1 - Bushings

Referring to DIN 41450 or the O-Norm, bushings with M 10 × 0.75 thread are provided for shafts of 6 mm diameter, bushings with M 7 × 0.75 for shafts of 4 mm diameter and M 15 × 1 for shafts of 10 mm diameter.

We suggest that these values be retained as variants.

3.1.2 - Locking against rotation

We agree to dimension S 1 and dimension S 2. The same dimensions have been suggested in the Austrian standards (O-Norm).

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

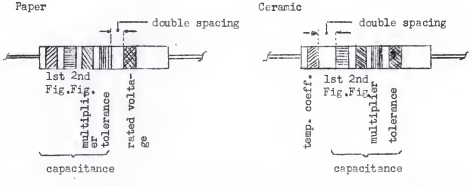
TECHNICAL COMMITTEE No.40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Italian National Committee to
Document 40-1(Central Office)2, Colour Code for
Fixed Paper Dielectric Capacitors for D.C.

The Italian National Committee is not in a position to approve Document 40-1(Central Office)2 in its present form. The reason is that it is very difficult to distinguish, by visual inspection only, between a colour-coded tubular paper capacitor and a colour-coded tubular ceramic capacitor assembled in a protection tube. In both cases we have a five-hand colour code, but with different significance.

A possibility to eliminate any doubt could be the following, illustrated for the sake of simplicity by drawing:-



Note.- In some cases the temperature coefficient is expressed with two colour bands instead of one. In this case there is already distinction between the two types of capacitors.

However, the Italien Committee is ready to discuss every other reasonable proposal which achieves good distinction between paper and ceramic colour-coded tubulars.

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40-1(Japan)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

2 - MAY 15
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TECHNICAL COMMITTEE No.40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Japanese National Committee
on Documents 40-1(Secretariat)3 and 40-1(Secretariat)4

40-1(Secretariat)3

We approve this draft subject to modifications.

Opinions:-

1.1 Sometimes metal foils are used to connect the electrodes and the terminals; however, if the foil is so used it is desirable to delete the terms "and without metal foils between these electrodes".

1.3.1 The component ratio of the AC frequency to the DC voltage is obscure as in the case of Document 40-1(Central Office)1, hence it should be distinctly specified as in the note 2 under Clause 1.3.2.

1.7 The temperature coefficients as such numerical value are used often, hence it is desired that the temperature coefficient in the table be supplemented with "+ 0 - 100" and the retrace characteristic with "± (0.1% + 0.1 pF)".

2.2.1 The relation between the second section hereunder and the condition prior to the measurements is not clear, hence it should be distinctly specified.

40-1(Secretariat)4

We approve this draft subject to modifications.

Opinions:-

2. The colours grey and white for the multiplier should be made 10^{-2} for grey and 10^{-1} for white as in Document 12-3(Central Office)3.

Moreover, in the column for the temperature coefficients, "0 to - 100" should be added and the colour code should be made orange.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Japanese National Committee
on Document 40-1(Secretariat)2 : Draft shaft dimensions
and fixing dimensions of mechanically operated components

We approve this draft subject to modifications.

Opinions:-

2.2 - Shaft diameters

In Japan, shaft diameters such as 6 mm and 8 mm are often used, hence "Type B" should be revised to "Type C, "Type C" to "Type E" respectively and the following dimensions should be appended:-

Type	Millimetres		
	min.	nom.	max.
B	5.960	6.000	6.02
C	7.95	8.000	8.025

2.3 - Shaft lengths

In Japan, shaft lengths such as 20 mm, 40 mm and 60 mm are often used, hence the following dimensions should be added to the preferred shaft lengths:-

20 mm
40 mm
60 mm

2.4 - Shaft ends

2.4.2 - With reference to the change in Clause 2.2, "Type B" in the table should be revised to "Type B and Type C", and "For Type C shafts" in the sentence should be revised to "For Type D and Type E shafts" respectively.

2.4.3 - With reference to the change in Clause 2.2, the following dimensions should be added to the table and "B" therein should be revised to "C".

Type	Slot Dimension	Millimetres		
		min.	nom.	max.
B	H_1	4.37	4.5	4.63
	H_2	4.45	4.5	4.36
	L	12.7	-	-

Moreover, the following terms should be added to the note:- "No shaft of length 20 mm shall have a flat end".

40 -1(United Kingdom)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TECHNICAL COMMITTEE 40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

British Comments on Document 40-1(Secretariat)1
Specification for Fixed Carbon Composition
Resistors (Second Draft)

The British Committee has considered Document 40-1(Secretariat)1, Specification for Fixed Carbon Composition Resistors (Second Draft), and submits the following comments:-

Clause 1.1 Scope. It is proposed that the specification be restricted to fixed carbon - composition resistors with a rated dissipation not exceeding 3 watts and a rated resistance value between 10 ohms and 10 megohms.

Clause 1.3.1. Rated wattage: It is proposed that, in the title, and in the text of the specification, the word "wattage" should be amended to "dissipation". It is further proposed that the rating should be at a temperature of 70°C. Figure 1 would have to be amended appropriately.

Clause 1.3.4. Minimum temperature of a resistor: The definition of the minimum temperature of a resistor appears to serve no useful purpose and it is therefore suggested that it be deleted.

Clause 1.4. Classification into groups. It is suggested that the example should comprise one of the groups adopted for resistors.

Clause 1.4.2. It is proposed that Group 446 be deleted.

Clause 1.7. Wattage and voltage ratings: It is proposed that the rated dissipation and rated voltage should be as follows:-

$\frac{1}{8}$ watt	350 volts
$\frac{1}{4}$ "	500 "
$\frac{1}{2}$ "	500 "
1 "	750 "
2 watts	750 "
3 "	1000 "

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE 40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

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British Comments on Document 40-1(Secretariat)7
Draft IEC Specification for Radio Interference
Suppression Capacitors for A.C.

The British Committee has considered document 40-1(Secretariat)7, Draft specification for Radio Interference Suppression Capacitors for A.C., and submits the following comments:

General:- Clarification is sought as to why the specification is restricted to capacitors for A.C; it is considered that it should also apply to capacitors for D.C. working.

Clause 1.3.3 Safety capacitors:- The use of the term 'Safety capacitors' is not favoured. It is proposed that capacitors be classified as Class X or Class Y as follows:-

"Class X denotes a type of capacitor suitable for use in situations where failure would not lead to danger of electric shock.

Class Y denotes a type of capacitor suitable for use in a situation where failure would lead to danger of electric shock".

Clause 1.3.4 Rated voltage:- First line, the words 'average' and 'operating' should be deleted.

Third line, the words "at the maximum temperature of" should be amended to "over".

Clause 1.4.2:- It is suggested that different groups be specified for capacitors of different dielectrics, and the following groups are proposed

ceramic dielectric, 554, 665, and 765.
paper dielectric, 665, 765, and 776.
mica dielectric, 554, 665, and 765.

Group 776 has been added for paper dielectric capacitors since for large paper-dielectric capacitors, 55°C is the safe upper limit.

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40-1(United Kingdom)3

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TECHNICAL COMMITTEE 40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

British Comments on Document 40-1(Secretariat)6
IEC Draft Specification for High Stability
Fixed Carbon Resistors (Second draft)

The British Committee has considered Document 40-1(Secretariat)6, Specification for high-stability fixed carbon-resistors, and submits the following comments:-

General: Since Document 40-1(Secretariat)6 requires reference to Document 40-1(Secretariat)1, Specification for fixed carbon resistors, the comments on the latter document in 40-1(United Kingdom)1 will also be applicable to 40-1(Secretariat)6.

It is proposed that the specification for high stability fixed carbon resistors should not be a separate document, but should be a part of the specification for fixed carbon-composition resistors.

Clause 1.1. Scope: It is proposed that the rated resistance value should be between 10 ohms and 10 megohms.

Clause 1.3.1. Rated voltage: It is proposed that in the title and throughout the text of the specification, the word "wattage" should be amended to "dissipation" and that it should be specified at temperatures of 70°C. Figure 1 will require amendment appropriately.

Clause 1.4.2. It is proposed that the groups should be 444 and 445.

Clause 1.7. Wattage and voltage rating. It is proposed that the rated dissipation and corresponding rated voltages should be as follows:-

$\frac{1}{8}$ Watt	300 Volts
$\frac{1}{4}$ "	350 "
$\frac{1}{2}$ "	500 "
$\frac{3}{4}$ "	500 "
1 "	750 "
2 Watts	750 "

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-1 CAPACITORS AND RESISTORS

British Comments on Document 40-1 (Secretariat)2
Draft shaft dimensions and fixing dimensions
of mechanically operated components.

The British Committee has considered Document 40-1 (Secretariat)2 and submits the following comments:-

Clause 2.2 Shaft diameters: It is proposed that the following shaft diameters should be added to the table:-

D. 0.1850 in. min - 0.1870 in. max.

E. 0.3725 in. min - 0.3745 in. max.

These additions are to cater for the basically nominal 0.1875 in. and 0.375 in. diameter shafts.

The tolerences on the Type B shaft should be 0.2470 in. min - 0.2495 in. max. Although this shaft is referred to as a 0.25 in. nominal shaft, this nominal dimension is not of course the centre of the tolerance range.

Excentric shafts are referred to in the text, but they are not included in the table; the following dimensions are proposed:-

a. Inner shaft diameter 0.185 in. min - 0.187 in. max.

b. Outer shaft diameter 0.264 in. min - 0.266 in. max.

Clause 2.3 Shaft lengths: It is proposed that the 1 in. length shaft should also have a screw-driver slot, and that a shaft length of 0.625 in. with a screw-driver slot should be included.

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40 - 1 (United Kingdom)5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40: ELECTRONIC COMPONENTS

SUB-COMMITTEE 40 - 1: CAPACITORS AND RESISTORS

2 - MAY 15
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British Comments on Document 40 - 1 (Central Office)1,
Specification for Fixed Paper Capacitors for D.C.

The British Committee has considered Document 40 - 1 (Central Office)1 and gives approval to the Document under the two months' procedure subject to the following comments:-

Preface - 1st paragraph - 5th line - The date of the Paris Meeting should be 1950 and not 1953.

7th paragraph - 1st line - The word "found" should be amended to "stated" since it has not yet been approved that the requirements of I.E.C. Publication No. 68 are not satisfactory.

3rd line - In view of the possible amendments to I.E.C. Publication No. 68 the issue date of the edition referred to in this paragraph should be stated, this will avoid confusion if a revised Publication No : 68 is issued at sometime in the future.

Clause 2.5.4.3. Although the United Kingdom does not agree to the temperature correction factor, it does not wish to withhold approval on these grounds.

Clause 2.5.4. On the assumption that the insulation of a capacitor falls to one-half for each 10 degree centigrade rise in temperature, the limit for types 776 and 777 in Clause 2.6.4. should be 27 seconds (81 megohms) as this type of capacitor is not well sealed from the ingress of traces of moisture during even short storage for test, it is likely that its performance may be worse than that to be expected from the "10 degree law" a limit of (45 megohms) is proposed.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Proposals of the United States for modification of Document 40-1(Secretariat)2, Shaft Dimensions and Fixing Dimensions of mechanically operated Components, as discussed at London Meeting.

Paragraph 2.2 We recommend the addition of shaft diameters for concentric shafts having the outer shaft diameter .265" and the inner shaft diameter .187".

Paragraph 2.4.3 We recommend modification of the H1 and H2 dimensions to conform with dimensions which are standard in U.S. practice:-

Dimension	Inches		
	Min.	Nom.	Max.
H1	0.213	0.218	0.223
H2	0.154	0.156	0.158

Paragraph 3.1.2 We recommend the addition of "S" dimension of 0.375" to conform with the standard dimension used in the United States.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2: R.F. CABLES AND R.F. CONNECTORS

Unconfirmed Minutes of the meeting
held in London on June 28th, 29th and 30th, 1955.

The following delegates attended the meeting:-

Chairman:	Prof. W. DRUEY	(Switzerland)
Secretary:	Mr. L. van ROOY	(Netherlands)
Asst. Secretary:	Mr. R.K. KLOPPERS	(Netherlands)

COUNTRY	DELEGATES
CZECHOSLOVAKIA	Mr. M. Baudys
DENMARK	Mr. N.E. Holmblad
FRANCE	Mr. G. Carmine Mr. A. Dauphin
GERMAN FEDERAL REPUBLIC	Mr. H. Peters Mr. W. Wild
ITALY	Mr. C.C. Corazza Mr. D. Gagliardi Mr. A. Morello
NETHERLANDS	Mr. F.W. Edens Mr. M.A. Eggink Mr. L.F.H. Mans Mr. C.F. Froos
NORWAY	Mr. O. Nystog
SWEDEN	Dr. B.A.S. Josephson
SWITZERLAND	Dr. G.W. Epprecht Mr. E. Ganz
UNITED KINGDOM	Mr. W.T. Clackband Mr. F.J. Cox Mr. L.A. Fountain Dr. T.S. Hammerton Mr. R.W. Kersey Mr. R.C. Mildner

40-2(Bureau Central / Central Office)2

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES N° 40: PIECES DETACHEES POUR EQUIPEMENTS ELECTRONIQUES

SOUS-COMITE 40-2: CABLES ET CONNECTEURS POUR FREQUENCES RADIOELECTRIQUES

TECHNICAL COMMITTEE No.40: COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : RADIO-FREQUENCY CABLES AND RADIO-FREQUENCY CONNECTORS

PRESCRIPTIONS ET METHODES DE MESURE GENERALES POUR CABLES A FREQUENCES RADIOELECTRIQUES

GENERAL REQUIREMENTS AND MEASURING METHODS FOR RADIO-FREQUENCY CABLES

Ce document a été approuvé par le Comité d'Etudes N° 40 lors de sa réunion à Londres le 8 juillet 1955.

Il est soumis aux Comités nationaux pour approbation suivant la Règle des Six Mois.

This document was approved by Technical Committee No.40 at its meeting in London on the 8th July, 1955.

It is submitted to the National Committees for approval under the Six Months' Rule.

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December, 1955

40-2(Central Office)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT
SUB-COMMITTEE 40-2: R.F. CABLES AND R.F. CONNECTORS

Report on the Voting under the Six Months Rule for the approval of Document 40-2(Central Office)1 : Recommendations for the characteristic impedances and dimensions of radio-frequency coaxial cables, together with a statement by the Chairman of Technical Committee No.40 on the action to be taken as a result of the voting.

I. Report on the Voting

Document 40-2(Central Office)1 was circulated to National Committees on 23rd December, 1954 with a request that the Central Office be informed, within six months, whether or not they were in favour of this document being published as an IEC Recommendation.

The following replies have been received:-

For approval : 13 countries

Union of South Africa	letter of	1.3.55
Norway	"	4.3.55 - comments
Japan	"	30.4.55
Sweden	"	1.6.55 - comments
U.S.A.	"	1.6.55
Netherlands	"	7.6.55 - comments
Belgium	"	8.6.55
Switzerland	"	8.6.55 - comments
Italy	"	13.6.55 - comments
Denmark	"	22.6.55 -
France	"	22.6.55 - comments
Finland	"	22.6.55
United Kingdom	"	10.10.55 - comments

Against approval : 2 countries

German Federal Republic	letter of	8.6.55 - comments
Austria	"	23.6.55

The British Committee made the following comment:- "In due course the United Kingdom may wish to submit proposals for additional sizes of coaxial cable, having regard to developments in television receiver aerial coaxial cables, but does not wish to hold up publication of the specification on this account".

The French Committee considers that the tolerance shown for the impedance is too small, taking into account the tolerance specified on the diameter, especially those for the first two 50 ohm cables. The French delegation to the London meeting of Sub-Committee 40-2 will explain the French point of view.

The German National Committee stated that they could only accept the document if the value of 60 ohms were also included as a standardized value. This statement was supported by Austria.

40-2(France)1

2 - MAY 15

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 40 : PIECES DETACHEES POUR L'ELECTRONIQUE

SOUS-COMITE 40-2 : CABLES ET CONNECTEURS A HAUTE FREQUENCE

Opinion du Comité français sur la
mesure de l'impédance caractéristique
mentionnée dans le document 40-2(Secrétariat)1

La mesure de l'impédance caractéristique, si elle doit être effectuée sur tous les câbles livrés, doit être simplifiée dans toute la mesure du possible. Le Comité français estime que la méthode indirecte (capacité et vitesse de propagation) semble la plus appropriée.

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40-2(Germany)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R.F. CABLES AND R.F. CONNECTORS

Remark of the German National Committee
on Document 40-2(London)5, Summary of comments on
Document 40-2(Central Office)1, Characteristic Impedances
and Dimensions of Radio-frequency Coaxial Cables
and Document 40-2(London)7, Report of the meeting held
in the afternoon of Tuesday, 28th June, 1955

The German National Committee regrets having to object to the wording of Page 1 of Document 40-2(London)5 and to the wording of Page 2 of Document 40-2(London)7. It has unfortunately not been possible for the German representatives of Sub-Committee 40-2 to raise these objections officially in London, as, at that time, they were not aware of the contents of the German "Voting Paper" dated May 8th, 1955, with regard to "Recommendation for the Characteristic Impedances and Dimensions of Radio-frequency Coaxial Cables, Document 40-2(Central Office)1". The Secretariat of the German Committee of I.E.C. had filled in and dispatched to Geneva the "Voting Paper" without re-discussing it with the German Sub-Committee 40-2, and this evidently on the assumption that, by adopting the wording chosen, no misunderstanding on the German point of view could arise. The German National Committee, however, regrets to find that the "Voting Paper" under review has nevertheless been misunderstood. It was intended not to be in favour with reservations, and it was only meant to be ruling, as can be seen from the "Voting Paper", in connection with Document 40-2(Germany)2. This document, however, included comments which were not in favour of Document 40-2(Central Office)1, unless the two amendments desired by the German Committee could be taken into favourable consideration.

The reservations concern the "Preface" and "Clause 2" of Document 40-2(Central Office)1, and the latter reservation should be regarded as the basis of the Recommendation. Application is, therefore, made for Page 1 of Document 40-2(London)5 and Page 2 of Document 40-2(London)7 to be amended as follows:-

1) for approval : 7 countries
"Germany" to be deleted in this column.

2) against approval : 1 country
"Germany" to be entered in this column.

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40-2(Secretariat)6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT
SUB-COMMITTEE 40-2: RF CABLES AND RF CONNECTORS

Points raised during the meeting of
S.C.40-2 in June, 1955 in London.

1. Document 40-2(Secretariat)2: General requirements and measuring methods of RF cables

1.1 In Document 40-2(Secretariat)1 National Committees were invited to supply further information with regard to the measurement of characteristic impedance. The answers which were received were discussed in London and it was decided that the method which would be included to the specification would be based upon the measurement of velocity rates and capacitance. Furthermore it was decided that for guidance of the user of the specification a number of measuring methods for characteristic impedance will be added in an appendix.

1.2 National Committees are invited to inform the Secretariat as to which methods of measurement for characteristic impedance are suggested for inclusion in the appendix.

The wording should preferably be such as to be suitable for inclusion in the document, specifying as well the accuracy of measurement and the frequency range for which the method is suitable.

1.3 A separate appendix to the general document for RF cables will be prepared in which a number of measuring methods will be given. For the time being methods for the following measurements will be included:-

a) Characteristic impedance (see also 1.2).
b) Preparation of cable ends for discharge tests (A proposal is made in 40-2(United Kingdom)1).
c) Calibration of measuring equipment for discharge test (The British delegation stated in London that a proposal will be made).
d) Screening efficiency (A proposal is made in 40-2(United Kingdom)4 and the U.S. delegation stated in London that they also will supply further information).
e) Transmission unbalance (A proposal was made by the U.S. delegation in London and it was added as an appendix to 40-2(London)10 which was handed to all delegates).
f) Corrosion tests (A proposal is made in 40-2(Switzerland)2).
g) Attenuation (A proposal was made in 40-2(Secretariat)3).

National Committees are invited to send to the Secretariat further proposals with regard to the above mentioned methods of measurement or additional tests. It is desirable that indications should also be added with regard to accuracies of measurement and applicable frequency ranges.

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40-2(Switzerland)5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No 40: ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-2: HIGH FREQUENCY CABLES AND CONNECTORS

Contribution of the Swiss Electrotechnical Committee (SEC)

Measurement of small reflections in coaxial-line and waveguide systems

Experimental results on coaxial connector pairs

By G. W. Epprecht and C. Stäger

Summary

In the first part of this paper various methods are described for measuring small reflections in coaxial and waveguide systems. These permit, partly with commercially available instruments, to reach an accuracy of measurement up to about ± 0,3 %. In addition, further methods are suggested by means of which even higher accuracy can be obtained, The advantages and disadvantages of these methods are examined, especially with regard to the sources of error.

The second part presents results of tests on 15 different coaxial connector types for the frequency range of 1800...4000 Mc./s. It is shown that by means of suitable assembly some of the existing types could be essentially improved with regard to the magnitude of reflection, as well as to the dispersion of the reflection values.

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40-2(United Kingdom)1

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Drg. No. 4399 Issue 2 attached

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO.40: ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-2: HIGH FREQUENCY CABLES AND CONNECTORS

British memorandum giving further information on discharge test proposed in Document 12-5(United Kingdom)10

In Document 12-5(United Kingdom)10, the British Committee submitted a proposal for a discharge test for radio-frequency cables. The British Committee now submits the following additional information upon the test.

The appropriate length of cable is prepared for test and mounted as shown in Fig. 1 (dimensions not given are not critical). The graphite extension of the outer conductor permits immersion of the end in a dielectric liquid without the liquid being drawn up between outer conductor and dielectric. It is formed by painting or spraying with a suspension of colloidal graphite in acetone. Commercial suspensions containing about 18 per cent solid carbon should be diluted by adding one part of the suspension to two parts by volume of a liquid composition, acetone 50 per cent, diacetone alcohol 40 per cent and ethyl lactate 10 per cent by volume. The resistance of the graphite film between cable braid and the terminating wire ring, before they are connected together, should be less than 200 ohms.

There is advantage in using guard rings in the oscillograph bridge method with separate screen arms, in that discharges within the cable and discharges to the guard rings, i.e. effectively to the ends of the outer conductor, may be distinguished. With other experimental arrangements guard rings should be connected to the outer conductor, to earth or to the low voltage end of the supply, or they may be omitted; assurance that the first discharges

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PLAN

FIG. 1. CABLE MOUNTING AND METHOD OF TERMINATION.

DRG No. 4399 (Fig. 2)

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40-2(United Kingdom)2

June, 1955
Drg. Nos. 4785/1 and 2 attached

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-2 : HIGH FREQUENCY CABLES AND CONNECTORS

British proposal for radio-frequency coaxial cable plugs and sockets for professional and commercial use

---

In Document 12-5(United Kingdom)8 the British Committee submitted proposals for a coaxial plug and socket for domestic television receivers.

The British Committee now puts forward the following proposal for coaxial plugs and sockets for professional and commercial use.

The proposal relates only to the mating parts and locking devices. Other features, such as cable-entry arrangements, are not covered.

It is proposed that there should be three types of plug and socket, as follows, for each internationally agreed size of coaxial cable.

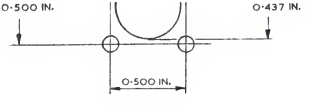
(i) 50 ohm impedance-matched plug and socket

(ii) 75 ohm impedance-matched plug and socket

(iii) General purpose plug and socket

NOTE. The qualification for the impedance matched classes is that the introduction of a plug and socket into an otherwise matched cable of the appropriate characteristic impedance should not introduce a V.S.W.R. greater than 1.2:1 at 3,000 Mc/s.

For the cable sizes in Document 40-2(Central Office)1 the following plugs and sockets are proposed.



40-2(United Kingdom)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE 40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-2 - HIGH FREQUENCY CABLES AND CONNECTORS

British Comments on Document 40-2(Secretariat)2 -
Second draft IEC General Requirements and Measuring Methods
for Radio-Frequency Cables

The British Committee has considered Document 40-2(Secretariat)2, Second draft IEC General Requirements and measuring methods for radio-frequency cables, and submits the following comments:-

Title. The use of the term "Radio-Frequency" in preference to "High Frequency" is welcomed.

1.1 Scope. Second line, the word "and" should be inserted between "coaxial" and "twin".

1.3.1.1 Solid insulation. Third line, the word "completely" should be amended to "substantially".

1.3.1.5 Attenuation. This clause is under review, and a comment may be submitted at a later date. It is however considered that the attenuation should be expressed in decibels per 100 metres and not per 10 metres.

1.3.1.6 Power rating. First line, the abbreviation "H.F." should be amended to "R.F." It is proposed that the maximum temperatures of inner conductor should be specified in the individual cable specifications, and not in Clause 1.3.1.6. The clause should end at the words "shall not be exceeded", and the words "specified in the Cable Specification" should be inserted between "Conductor" and "shall". The transfer of the temperature specification to the individual cable specifications will allow of the addition of cables with new dielectrics. It is agreed that the temperatures specified are reasonable for the materials quoted.

1.3.2.1 Braid angle. Third line, the mean diameter of braid equals "diameter over insulation + 2 dw."

1.3.2.2 Filling factor. Sixth line, the word "of" should be inserted between "thickness" and "braid".

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40-2(United Kingdom)4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 40 : ELECTRONIC COMPONENTS

of

SUB-COMMITTEE 40-2 : HIGH FREQUENCY CABLES AND CONNECTORS

British Proposal for the Measurement of Surface Transfer Impedance of H.F. Cable Screens

---

1. Introduction

The screening efficiency of a high frequency cable screen may be of interest at any frequency up to values as high as 10,000 Mc/s. In general there is no problem where homogeneous cylindrical shields are used since the screening effect in such cases can be readily calculated, but where a braided or taped construction is employed it becomes necessary to measure the screening efficiency. In the present state of knowledge extrapolation of measurements of the surface transfer impedance of non-homogeneous screens to frequencies other than those at which measurements have been made is of doubtful validity, so that, potentially, measurements may be required at any frequency within the working range of the cable.

2. Method

The method to be described has been used by us at frequencies up to 30 Mc/s (i.e. under conditions such that the sample length is much less than a wavelength) but somewhat similar methods have been used by other workers at much higher frequencies.

The apparatus is of the "triple coaxial" form, as used previously by Ochem and others. A short length of the cylindrical screen under investigation forms both the inner conductor of an energized coaxial system and at the same time the outer conductor of another coaxial line. The signal in the inner coaxial system is determined by the "surface transfer impedance" of the screen, the surface transfer impedance being defined for an elementary length as the potential gradient along the screen in the disturbed circuit when unit current flows in the disturbing circuit.

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40-3(Secretariat)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-3: PIEZO-ELECTRIC CRYSTALS

QUESTIONNAIRE
relating to the standardization of load capacitances
for quartz crystals to be used in
parallel resonance oscillators

During the London meeting, general agreement was reached on several values to be included in the list of standard load capacitances for quartz crystals intended to be used in parallel resonance oscillators. (See R.M.401, Item 4, Page 13).

For fundamental resonance crystals, the values of 20 and 30 pF are already in extensive use for general purpose application, and it was recognized that, where oscillator stability is of primary importance, a load capacitance of 100 pF is adequate.

A value of 50 pF has been in use to some extent, mainly for reason of increased stability. On the other hand, the step from 30 to 50 pF seems to be too large for those cases where the crystal load is the limiting factor and where 30 pF cannot be realized, e.g. in oscillators with crystal switching. For this reason the value of 40 pF has been proposed and it was doubted whether the difference of stabilization effect between 40 and 50 pF was sufficient to justify the inclusion of both values in the table of standard capacitances.

Furthermore, consideration should be given to the standardization of values below 20 pF with a view to use with overtone crystals.

Question 1:-

National Committees are requested to state whether they are in favour of the value of either 40 pF or 50 pF, or whether they are of the opinion that both values should be included. In fact a choice should be made between the following three tables:-

Table 1	Table 2	Table 3
20 pF	20 pF	20 pF
30 pF	30 pF	30 pF
40 pF	50 pF	40 pF
100 pF	100 pF	50 pF
		100 pF

It will be appreciated if the reasons for the choice would also be stated.

Question 2:-

National Committees are requested to state whether they are in favour of the standardization of load capacitances below 20 pF for overtone crystals and if so, to put forward proposals of values.

The answers to this questionnaire should reach the Secretariat (Netherlands National Committee) before March 1st, 1956.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-3 - PIEZO-ELECTRIC CRYSTALS

Correction and addition to Document 40-3(United Kingdom)1
British Comments on Documents 12A(Secretariat)6 and
12A(Secretariat)8

The following correction and addition should be made to Document 40-3(United Kingdom)1, British comments on Documents 12A(Secretariat)6 and 12A(Secretariat)8:-

Page 6. The proposal relating to Sheet 2 is withdrawn. The British Committee accepts the dimensions of Sheet 2.

Additional proposal. The British Committee proposes that there should be International agreement on pin connections in crystal holders having valve-type bases. For the holders illustrated in Figs. 1, 2 and 3 of Document 40-3(United Kingdom)1, the following connections are proposed:-

Single units..... Pins 1 and 5.

Double units..... Pins 1 and 5 for the lower frequency crystal.

Pins 3 and 7 for the higher frequency crystal.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-3 : PIEZO-ELECTRIC CRYSTALS

British Comments on Document 40-3(Secretariat)1 -
First Draft Specification for Crystal holders

The British Committee has considered Document 40-3 (Secretariat)1 - First Draft Specification for Crystal holders, and submits the following comments:-

There appears to be no need for a separate document specifying tests for holders. Such a specification would be of no direct use to a purchaser of crystal units since he is concerned with the performance of the finished article. The specification would concern the manufacturer of the unit and the supplier of the holder only if they were two separate manufacturers. The specification as at present drafted is therefore likely to have a very restricted application.

It is proposed that, in general, tests should be applied to the complete unit, and should be included in any specification which might be prepared based upon 12A(Secretariat)6 and 12A(Secretariat)8, second and third drafts, respectively, of the Group specification for Quartz crystal units.

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40-3(United Kingdom)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-3 - PIEZO-ELECTRIC CRYSTALS

Additional British Comments on Documents 12A(Secretariat)6 and 12A(Secretariat)8 - Second and Third Drafts, respectively, of the Group Specification for Quartz Crystal Units for Oscillators

---

British comments on Document 12A(Secretariat)6 and 12A(Secretariat)8, Second and Third Drafts, respectively, of the group specification for quartz crystal units, have already been circulated in Documents 40-3(United Kingdom)1 and 1a.

The British Committee now submits the following proposal for a revision of Clause 3.1.2 of Document 12A(Secretariat)6:-

3.1.2 Equivalent electrical circuit.

Since the phenomenon of piezoelectricity is reversible - that is, a deformation causes a voltage to be developed across the electrodes and a voltage applied to the electrodes results in deformation - it is possible to replace a crystal by an equivalent electrical circuit.

Near a resonance, the crystal can be replaced by the circuit in Fig.3.1. This simple circuit only applies when the required resonance is well removed from any unwanted resonance. In other cases the equivalent circuit is as in Fig.3.2., the mechanical coupling between various modes being represented by coupling of the inductances.

In Fig.3.1., Cp is the inherent capacitance of the crystal and approximates to the capacitance of the unit when measured at a frequency well away from any resonance. The series connected elements L_K, C_K and R_K represent the piezoelectric reaction and are called the motional branch. Although the various parameters of the equivalent circuit can be measured, it must be remembered that the crystal is a two terminal network and can only be considered as a whole, connection to the various parts of the motional branch being impossible.

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40-5(Central Office)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-5: BASIC TESTING PROCEDURE

Draft Agenda for the Meeting to be held at
the Offices of the Comité Electrotechnique Français,
54, Avenue Marceau, Paris 8e,
on the 4th, 5th and 6th January, 1956

Chairman :-	Mr. E.F. Seaman	(U.S.A.)
Vice-Chairman :-	Dr N.A.J. Voorhoeve	(Netherlands)
Secretariat :-	United Kingdom	

1. To consider the scope of Sub-Committee 40-5, Basic Testing Procedures.

   (Secretariat note:- Sub-Committee 40-5 was set up by Technical Committee No.40, Electronic Components, at its meeting in London in 1955, to deal with the revision of IEC Publication No.68, including the general classification system of components. Sub-Committee 40-5 was also entrusted with the co-ordination of view points on standard ambient temperatures).

2. To consider Document 40-5(Secretariat)1, Secretariat proposal for amendments to IEC Publication No.68, Basic Climatic and Mechanical Robustness Testing Procedures for Components.

   (Secretariat note:- Document 40-5(Secretariat)2, summarizing the comments from National Committees which were taken into account during the preparation of Document 40-5(Secretariat)1, will be circulated before the meeting).

3. To consider proposals for standard ambient temperatures.

4. To receive an interim report from the Electronic Components Working Group (IEC Publication No.68 revision).

5. Any other business.

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X-TK1A/15
#35

40-5(Secretariat)1

2 - MAY 15
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November 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE 40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-5 - BASIC TESTING PROCEDURES.

Secretariat Proposal for Amendments to
IEC Publication No.68, Basic Climatic and Mechanical
Robustness Testing Procedure for
Components.

In Document 40(Secretariat)2, National Committees were asked to submit proposals for the revision of I.E.C. Publication No.68, Basic climatic and mechanical robustness testing procedure for components.

Proposals have been received from several national Committees and have been circulated in the following documents:-

40(Belgium)1
40(France)2
40(India)2
40(Netherlands)1
40(Sweden)1
40(Switzerland)2
40(Switzerland)3
40(Switzerland)4
40(United Kingdom)1
40(U.S.A.)1

Having considered the comments and proposals in those documents, the Secretariat proposes that the following amendments and additions be made to I.E.C Publication No.68:-

Clause 1. Scope. No amendment proposed.

Clause 2 Object. No amendment proposed.

IEC(TLE)745

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 : ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-5: BASIC TESTING PROCEDURES

Swiss Proposals for amendments to clause 4.10 Test K: Salt Mist, of IEC Publication No. 68, Basic Climatic and Mechanical Robustness Testing - Procedure for Components

---

Since the production of a salt mist by atomising a liquid through nozzles forms a mist having a very wide range of particle sizes, and since the composition and reproducibility depend to a great extent on the design of the nozzles and the construction of the chamber, the following new specification is proposed for section 4.10, Test K: "Salt Mist". The proposal is based on the explanations given in Document 40(Suisse)4, Description d'une chambre d'essai de corrosion améliorée, which was distributed in April 1955.

4.10. Test K: Salt Mist

4.10.1

Test chamber.

4.10.1.1.

The chamber, made entirely of noncorrosive material, for this test shall be so constructed that an aerosol of the salt solution to be atomised is produced in a separate apparatus, this aerosol being introduced into the test chamber. The same solution shall only be used once.

4.10.1.2

The aerosol is formed by atomising a salt solution by centrifugal action, the solution being thrown on to a system of baffle plates in such a manner that the large drops are trapped. The aerosol formed in this way should have the following characteristics:

Drop diameter mm	Fraction of total %
0·002 ... 0·004	75
0·001 ... 0·005	90

Statistical mean size of drop about 0·003 mm
Number of drops: 2×10^5 ... 4×10^5 drops/cm^3

40-5 (United Kingdom) 1

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December, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-5 - BASIC TESTING PROCEDURES

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British Comments on 40-5(Secretariat)1,
Secretariat Proposal for Amendments to
I.E.C. Publication No.68.

The British Committee has considered document 40-5(Secretariat)1, Secretariat Proposal for Amendments to I.E.C. Publication No.68, and submits the following comments:-

Page 5. Explanation Column. First paragraph, 6th line, the low pressure severity should be Severity IV.

Page 7. Explanation Column. The second paragraph should be amended to "Components with a humidity performance to meet 7 days (Severity VII) of the long term damp heat, followed by assisted recovery, are of the type suitable for use in sealed equipment and assemblies. They are subjected to one cycle of accelerated damp heat, followed by assisted recovery, but are not subject to mould growth or salt mist.

Page 9. Clause 4.6.2, third paragraph, the word "driving" should be amended to "during"

Page 12. Clause 4.15. It is noted that the Secretariat proposes to insert an extended sealing test, and the following is suggested for consideration:-

Clause 4.15.1. The components shall be subjected to the tests in Clause 4.14.2. for Class B seals, except that the pressure shall be 20 lb/sq.in.

Clause 4.15.2. The component seals shall then be tested and the rate of leakage shall not exceed that quoted in the relevant specification.

Clause 4.15.3. The components shall then be connected to a driving mechanism, so arranged that the component is not restricted in its action, nor forced against its stops. They shall then be subjected to 10,000 cycles of operation at a rate of not less than 5 cycles per minute at their maximum category temperature.

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#38

IEC(TLE) 792
/See over

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39(United Kingdom)30

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August, 1955.
Drg. No. 4859 attached.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 39 - ELECTRONIC TUBES AND VALVES

British Memorandum on the Interconversion of Inch and Metric Dimensions.

NOTE: This Document replaces Document 39(United Kingdom)30 (PROV) which was circulated at the 1955 London Meeting of IEC/TC/39.)

The British Committee submits the following details of a method for the interconversion of inch and metric dimensions. It is suggested that the method be considered for adoption for the purpose of IEC/TC/39, Electronic Tubes and Valves.

This method is being submitted to the ISO Committee ISO/TC 3, Limits and Fits, as a British proposal for the interconversion of inch and metric dimensions.

Since the end of the war the interconversion of inch amd metric sizes on engineering drawings has become of considerable importance in trade with foreign countries using the metric system. Some British firms have established manufacturing or assembly plants in these countries because of import limitations or for servicing purposes, and consequently it has been desirable to redimension inch system engineering drawings in millimetres. On the other hand, foreign firms may find it necessary to redimension metric system drawings in inches for use in this country. For defence purposes also, it may be desirable for British designs of weapons or aircraft engines to be manufactured in countries using the metric system, and conversely. The difficulty encountered in the conversion of these drawings arises when it is necessary to formulate a procedure for conversion which ensures that components acceptable when inspected to a drawing dimensioned in one set of units are not rejected when inspected to the corresponding drawing dimensioned in the other set of units. Such dimensional interchangeability can, of course, be maintained by making the conversion to a very high degree of accuracy i.e. by calculating the converted size to a large number of decimal places, but there is little justification in the use of a number of decimal places not warranted by the available data, and too many decimal places in the converted size become an embarrassment in practical use.

X-TK1/1/75
#39

39(Secretariat)22

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September, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.39 : ELECTRONIC TUBES AND VALVES

Points arising from the London meeting
for consideration by the National Committees

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1. All National Committees are invited to submit comments on Document 39(United Kingdom)28 of June, 1955 "Recommended practice for the preparation of outline drawings of electronic tubes and valves". (Comments have already been received from the United States).

2. All delegates to the London meeting are invited to send in comments to the Secretariat on the American proposal for a socket standard that was handed round during the London meeting. See item 8 of the Minutes.

3. National Committees are asked to comply with the recommendations of Technical Committee No.39 (which will be circulated with a Secretariat document within a few weeks) regarding the use in National standards of the British document 39(United Kingdom)11 "Recommendations on the use of Electronic Valves". See item 10 of the Minutes.

4. During the meeting it was decided (item 10 of the Minutes) that next year "ratings of electronic tubes and valves" would be one of the items on the agenda. National Committees are invited to submit proposals for standardization.

5. During the meeting the United States delegation drew the attention of the National Committees to the article "Proposed methods of testing transistors" in the January, 1955 issue of "Communication and Electronics" of the American Institute of Electrical Engineers.

   National Committees are invited to submit comments on the methods proposed therein.

6. National Committees are invited to submit comments on Document 39(United Kingdom)30 "British memorandum on the inter-conversion of inch and metric dimensions".

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39(Germany)16

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.39 : ELECTRONIC TUBES AND VALVES

New outline with cap used with small button
Noval 9-pin base, as proposed at the London meeting

During the London meeting the German delegation proposed that a document should be drafted incorporating an outline with cap corresponding with the outline as mentioned in Documents 39(Netherlands)1 and 1a, to complete the list of tubes and valve outlines with cap used with small button noval 9-pin bases.

We should like to submit the proposal to insert the new outline with cap, given in the following table, into IEC Publication No.67. The letters refer to 39(Central Office)13, sheet 2a.

	inches			mm			Notes
	min.	nom.	max.	min.	nom.	max.	
A	-	-	7/8	-	-	22.2	
C	-	-	-	-	-	-	1,3,4
D	-	-	2 11/32	-	-	59.5	3,4
E	1 22/32	1 25/32	1 28/32	42.9	45.2	47.6	2

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9(Belgium)207

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.9 : ELECTRIC TRACTION EQUIPMENT

Comments of the Belgian Committee on the Draft
Rules for auxiliary machines on motor vehicles
(Appendix II to R.M.338)

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2 - MAY 15
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13 - Rating plates

Note 3

In order to agree with a recent decision of Technical Committee No.16 - Terminal Markings and other identification - this note should be worded as follows:- "The motors and generators shall be provided with an indicator plate or a sign showing the normal direction of rotation, if there be a normal direction of rotation".

28bis - Interruption test

It would seem that the time allowable between two consecutive interruptions should be made clear:-

The following text is proposed:-

"The voltage shall be interrupted and restored 5 times in succession with sufficient time between two consecutive interruptions for the operating conditions of the motor to become stable, the motor operating at its continuous rating with the weakest field that can be obtained in service".

32 - Tests to check that the machine is in good running order

The number of starting tests should be defined for the type tests.

It is proposed that this be limited to a maximum of 10 starts.

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9(Belgium)206

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.9 : ELECTRIC TRACTION EQUIPMENT

2 - MAY 15
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Comments of the Belgian Committee on the
Draft Rules for the electrical transmissions
of vehicles with diesel engines (Appendix III to R.M.538)

---

2 - Service conditions

The service conditions in the different I.E.C. Recommendations should be the same.

The limit of altitude has been fixed in other recommendations at 1 000 m and there seems to be no reason to change this for diesel electric transmissions.

3 - Characteristic data on diesel engines

The definition of the rated output of a diesel motor has been defined slightly differently than in Group 30 of the International Electrotechnical Vocabulary.

The Belgian Committee is in favour of the definition No.30.05.220 (Document 1(30)(Secretariat)241) provided that the words "with the exception of cooling fans" be deleted.

For the rated output of a diesel electric locomotive, the Belgian Committee proposes the following definition:-

"The sum of the outputs of diesel motors supplied to the main generators and available for traction."

In Paragraph 6 the sentence "but does not necessitate any over-dimensioning of the machine if the whole of the apparatus is well designed" should be deleted.

4 - Definitions of the ratings

It should be made clear in the first line that the definition applies to traction motors and generators.

5 - Classes of ratings

The Belgian Committee is not in favour of retaining the mixed rating which is fictitious and moreover may lead to the machine being damaged.

The Belgian Committee therefore proposes that Clause 10 and the tests referring to this mixed rating be deleted.

14 - Classes of tests

It is proposed that the first sentence of Paragraph b) read:-

"These are carried out in principle on all machines of the same batch."

16 - Classification of insulating materials

This clause should be deleted and reference should be made to the international recommendation prepared by Sub-Committee 2C, Classification of Insulating materials.

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9(Belgium)209

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December, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TECHNICAL COMMITTEE No.9: ELECTRIC TRACTION EQUIPMENT

Comments of the Belgian National Committee on
Document C.M.T.49, Contribution of the U.I.C.
to the work of the International Mixed Committee on
Electric Traction Equipment (C.M.T.).

The Belgian Committee appreciates the reasons which prevent the U.I.C. from abandoning the notion of the one-hour rating.

However, the Belgian Committee notes that there is a growing tendency to attribute more importance to the continuous rating and it is thought that a knowledge of this rating is of more value than that of the one-hour rating.

Consequently the Belgian Committee does not ask for this latter rating to be abandoned but makes the following proposal:-

> "When offers of new equipment are made only the continuous rating of the motors and generators is to be guaranteed by the manufacturer, who may be required to specify the one-hour rating for information purposes if the operator so desire.
>
> The exact one-hour rating shall be determined only after the prototypes have been tested."

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9(Belgium)210

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.9 : ELECTRIC TRACTION EQUIPMENT

Comments of the Belgian Committee on Document
C.M.T.50 - Rules for the testing of electric rolling stock on
completion of construction and before entry into service

---

11. The Belgian Committee draws attention to the fact that the voltages adopted for the dielectric tests were chosen taking account of the fact that the tests are made in the normal ambient conditions and not in a particularly humid atmosphere.

It is considered, therefore, that no dielectric test should be specified immediately after the water tightness test.

16. The Belgian Committee does not consider that it is recommendable to include detectors inside the field coils; these detectors and the conductors joining them to the measuring instruments may be the source of trouble which it is preferable to avoid.

The indications of temperature-rise given by such devices are not reliable because the time constants for the temperature-rise of the different windings of a machine are often different (sometimes in the ratio of 1 to 3).

18. The Belgian Committee proposes that the sentence "... specified static pressure is maintained at the machines'inlets" at the end of the first paragraph of this clause be deleted.

What is important is that the correct output shall be achieved. If the real load losses are smaller than anticipated, the real output would be greater than guaranteed which is a good thing.

The number of starting tests (10) is excessive, especially in the case of A.C. motors. The Belgian Committee proposes that this number be limited to 6 (3 at the maximum voltage and 3 at the minimum voltage).

These starting tests shall be made with the motors cold.

19. The Belgian Committee is not clear as to the difference between the tests a and c specified in this clause. Attention is drawn to the difficulty of carrying out voltage jump tests from 0.6 to 1.2 U for auxiliary motors and consequently the Belgian Committee wonders if such a test should be introduced into the rules.

20 and 21

If all the tests specified in the draft be carried out, the transformer will have to withstand 3 dielectric tests (one of which may be in a humid atmosphere) which means that it will have withstood 4 tests including the acceptance test at the works.

The Belgian Committee draws attention to the danger of repeating such tests which fatigue the insulating material. It considers, therefore, that the dielectric tests in Clauses 20 and 21 should be deleted. Moreover, there are practical difficulties in carrying out such tests on the line.

X-TK1.A15
#45

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.9: ELECTRIC TRACTION EQUIPMENT

2 - MAY 15
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Comments by the British Committee on Appendix II
to R.M.338, Draft Rules for Auxiliary Machines
on Motor Vehicles (Electric Motors and Generators)

Clause 14 - Routine tests. It is suggested that the following clauses, which have been extracted from a draft British Standard for rotating electrical machines for use on rail and road vehicles, should replace the paragraph on routine tests.

SHORT-TIME ROUTINE TEST ON MACHINES

a) Purpose of Test. Every machine shall be run on load for a suitable period which it is recommended should not exceed one hour, for the following purposes:-

(i) To test the mechanical soundness of the bearings, commutator and other parts of interest.

(ii) To test the electrical soundness under sustained load.

(iii) To heat the machine prior to characteristic curve, overspeed and high-voltage dielectric tests.

b) Test conditions. The manufacturer and purchaser shall agree upon the duration of the test and upon the voltage, current, field strength and ventilation so that as far as possible the temperature-rises of all the windings and in particular the armature winding, shall be as close as possible to the following values at the time of shut-down:-

Machines with Class A insulation 90 Centigrade degrees

Machines with Class B insulation 110 Centigrade degrees

If, on any machine tested, the temperature-rise of any winding exceeds by more than 10°C the average temperature rise of this winding on the first machines tested, this machine may be subjected to a rating test. The average shall be established initially on the first 4 machines tested and shall be recalculated after 10 machines have been tested. In cases of machines tested back-to-back separate averages shall be established for the machines operating as motors and those operating as generators.

Where the resistance of a winding is measured after shut-down it shall not be necessary to plot a cooling curve in the case of routine tests but the reading should be taken not more than one minute after shut-down.

Clause 15. It is assumed that the various classes of insulation shown will be revised if international agreement is obtained on the revised Classification of Insulating Materials.

Clause 24. It is suggested that the following clauses on temperature measurement, which have been extracted from a draft British Standard for rotating electrical machines for use on rail and road vehicles, should be incorporated to replace Clause 24, but that the 'Remarks' at the end of this clause should be retained.

2(Bureau Central / Central Office)409

2 - MAY 15

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES N° 2:
MACHINES TOURNANTES

ARTICLES RELATIFS AU REGIME INTERMITTENT POUR INTRODUCTION DANS LA PUBLICATION N° 34 DE LA CEI RECOMMANDATIONS POUR LES MACHINES ELECTRIQUES TOURNANTES

Ces articles ont été acceptés lors de la réunion à Londres du Comité d'Etudes N° 2 et sont soumis aux Comités nationaux pour approbation suivant la Règle des Six Mois.

Reproduction interdite
Décembre 1955

TECHNICAL COMMITTEE No.2 :
ROTATING MACHINERY

CLAUSES DEALING WITH INTERMITTENT RATING FOR INCLUSION IN THE IEC RECOMMENDATIONS FOR ROTATING ELECTRICAL MACHINERY, PUBLICATION No.34

Those clauses were adopted by the London meeting of Technical Committee No.2 and are submitted to the National Committees for approval under the Six Months' Rule.

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December, 1955

X-7-K.1.A115 #4

1(35)(Secretariat)255

2 - MAY 15
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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES N° 1: NOMENCLATURE

REVISION DE LA
PREMIERE EDITION (1938) DU
VOCABULAIRE ELECTROTECHNIQUE
INTERNATIONAL

- G R O U P E 35 -

APPLICATIONS ELECTROMECANIQUES

3ème Projet
établi par le
Comité Electrotechnique Suisse

Ce projet est soumis aux
Comités nationaux pour approbation
suivant la Règle des Six Mois

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Novembre 1955

TECHNICAL COMMITTEE No.1: NOMENCLATURE

REVISION OF THE
FIRST EDITION (1938) OF THE
INTERNATIONAL ELECTROTECHNICAL
VOCABULARY

- G R O U P 35 -

ELECTROMECHANICAL APPLICATIONS

3rd Draft
prepared by the
Swiss Electrotechnical Committee

This draft is submitted to
National Committees for approval
under the Six Months' Rule

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November, 1955

1(40)(Secretariat)253

2 - MAY 15

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES N° 1: NOMENCLATURE

REVISION DE LA
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INTERNATIONAL

- G R O U P E 40 -

APPLICATIONS ELECTROTHERMIQUES

2ème Projet
établi par le
Comité Electrotechnique Norvégien

Ce projet est soumis aux
Comités nationaux pour approbation
suivant la Règle des Six Mois

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Août 1955

TECHNICAL COMMITTEE No.1: NOMENCLATURE

REVISION OF THE
FIRST EDITION (1938) OF THE
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VOCABULARY

- G R O U P 40 -

ELECTRO-HEATING APPLICATIONS

2nd Draft
prepared by the
Norwegian Electrotechnical Committee

This draft is submitted to
National Committees for approval
under the Six Months' Rule

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August, 1955

X-TL.A/15
#49

1(20)(Central Office)212

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November, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.1 : NOMENCLATURE

2 - MAY 15
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Report on the Voting under the Six Months' Rule
for the approval of Document 1(20)(Secretariat)239:
Group 20 : Scientific and Industrial measuring instruments,
together with a statement by the Secretariat of
Technical Committee No.1 on the action to be
taken as a result of the voting

I. Report on the Voting

Document 1(20)(Secretariat)239 was circulated to National Committees on 31st July, 1954, with a request that the Central Office be informed, within six months, whether or not they were in favour of this document being published as an IEC Publication.

The following replies have been received:-

For approval : 16 countries Against approval : Nil

United Kingdom	letter of	21.12.54 - comments
Belgium	"	22.12.54 - comments
India	"	7.1.55
Union of South Africa	"	19.1.55 - comments
Argentine	"	20.1.55
Netherlands	"	27.1.55 - comments
Sweden	"	31.1.55 - comments
German Federal Republic	"	31.1.55
Denmark	"	1.2.55
France	"	7.2.55
Switzerland	"	8.2.55 - comments
Japan	"	1 .2.55 - comments
Austria	"	2.3.55
U.S.A.	"	3.3.55
Italy	"	4.3.55
Poland	"	7.3.55

Comments submitted are given in the following attached documents:-

1(20)(United Kingdom)226 1(20)(Sweden)226
1(20)(Belgique)22 1(20)(Suisse)124
1(20)(Netherlands)21 1(20)(Japan)3
1(20)(South Africa)3

13 countries, Australia, Brazil, Canada, Czechoslovakia, Egypt, Finland, Hungary, Israel, Norway, Portugal, Spain, U.S.S.R., Yugoslavia, sent no reply and are assumed to have no objections to the publication of Document 1(20)(Secretariat)239 as an IEC Publication.

1(31)(Secretariat)249

2 - [illegible]

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES N° 1 : NOMENCLATURE

REVISION DE LA
PREMIERE EDITION (1938) DU
VOCABULAIRE ELECTROTECHNIQUE
INTERNATIONAL

- G R O U P E 31 -

SIGNALISATION ET TOUS APPAREILS
ELECTRIQUES DE SECURITE
POUR CHEMIN DE FER

2ème Projet préparé par
l'Union Internationale des
Chemins de Fer
sur la base d'une proposition du
Comité Electrotechnique Français

Les Comités nationaux sont priés
d'adresser au Bureau Central de
la C.E.I., avant le 15 décembre 1955
au plus tard, leurs observations
concernant le présent document

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Juin 1955

TECHNICAL COMMITTEE No.1: NOMENCLATURE

REVISION OF THE
FIRST EDITION (1938) OF THE
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VOCABULARY

- G R O U P 31 -

SIGNALLING AND OTHER ELECTRICAL
SECURITY APPARATUS
FOR RAILWAYS

Translation of the 2nd Draft
prepared by the International
Union of Railways
on the basis of a proposal by the
French Electrotechnical Committee

The National Committees are requested
to send their comments on this document
to the Central Office of the I.E.C.,
not later than the 15th December, 1955

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June, 1955

X-TKI.A.75
#51

1(15)(Central Office)211

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November, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

2 - MAY 15
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TECHNICAL COMMITTEE No.1 : NOMENCLATURE

Report on the Voting under the Six Months' Rule
for the approval of Document 1(15)(Secretariat)233:
2nd draft, Switchboards and apparatus for
connections and regulation, together with a statement
by the Secretariat of Technical Committee No.1 on
the action to be taken as a result of the voting.

I. Report on the Voting

Document 1(15)(Secretariat)233 was circulated to National Committees on 10th December, 1953, with a request that the Central Office be informed, within six months, whether or not they were in favour of this document being published as an IEC Publication.

The following replies have been received:-

For approval : 12 countries

Against approval : Nil

Belgium	letter of	15.1.54 - comments
Italy	"	19.2.54
Switzerland	"	14.4.54 - comments
Poland	"	22.4.54
Union of South Africa	"	28.4.54 - comments
Japan	"	29.5.54 - comments
Netherlands	"	24.5.54
India	"	26.5.54
Austria	"	[illegible].6.54
France	"	26.6.54 - comments
Sweden	"	[illegible].7.54 - comments
United Kingdom	"	27.7.54 - comments

Comments submitted are given in the following attached documents:-

1(15)(Belgium)22
1(15)(Suisse)120
1(15)(South Africa)1
1(15)(Japan)1
1(15)(France)213 & 213A
1(15)(Sweden)223
1(15)(United Kingdom)221

17 countries, Argentina, Australia, Brazil, Canada, Czechoslovakia, Denmark, Egypt, Finland, Germany (Fed.Rep.), Hungary, Israel, Norway, Portugal, Spain, U.S.A., U.S.S.R., Yugoslavia, sent no reply and are assumed to have no objections to the publication of Document 1(15)(Secretariat)233 as an IEC Publication.

1(16)(Central Office)213

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May, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.1 : NOMENCLATURE

2 - MAY 15

Report on the voting under the Six Months' Rule
for the approval of Document 1(16)(Secretariat)240:
Group 16 - Electrical Relays - 2nd draft prepared
by the Swedish National Committee, together
with a statement by the Secretariat

I. Report on the voting

Document 1(16)(Secretariat)240 was circulated to National Committees on 7th May, 1954, with a request that the Central Office be informed, within six months, whether or not they were in favour of this document being published as an IEC Recommendation.

The following replies have been received:-

For approval : 15 countries

Against approval : Nil

Sweden	letter of	10.6.54
Belgium	"	18.10.54 - comments
U.S.A.	"	28.10.54
Germany (Fed. Rep.)	"	5.11.54 - comments
Austria	"	9.11.54
Norway	"	10.11.54
India	"	15.11.54 - comments
France	"	16.11.54 - comments
Italy	"	17.11.54
Poland	"	17.11.54
United Kingdom	"	19.11.54 - comments
Union of South Africa	"	24.11.54
Switzerland	"	25.11.54 - comments
Netherlands	"	9.12.54 - comments
Japan	"	21.12.54

Comments submitted are given in the following attached documents:-

1(16)(Belgique)23
1(16)(Germany)11
1(16)(India)205
1(16)(France)218
1(16)(United Kingdom)223
1(16)(Suisse)123
1(16)(Pays-Bas)213
1(16)(Allemagne)(Autriche)1

15 countries, Argentina, Australia, Brazil, Canada, Chile, Czechoslovakia, Denmark, Egypt, Finland, Hungary, Israel, Portugal, Spain, U.S.S.R., Yugoslavia, sent no reply and are assumed to have no objections to the publication of Document 1(16)(Secretariat)240 as an IEC Recommendation.

II. Statement by the Secretariat

The Secretariat has considered all the comments submitted by the National Committees and when possible has taken them into consideration when preparing the text for publication.

01(Central Office)237

Not for reproduction
August, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMITTEE OF ACTION

Unconfirmed Minutes of the Meeting of
the Electronics and Telecommunication
Working Group on 6th July, 1955
in London

Present:-

Dr H.S. OSBORNE	President, IEC
Prof. W.Th. BÜHLER	Netherlands (in the chair)
Mr. P. AILLERET	France
Mr. P. BESSON	France
Mr. J. CASSASSOLLES	France
Prof. A. DANIANOVITCH	Yugoslavia
Prof. W. DRUEY	Switzerland
Mr. T.E. GOLDUP	United Kingdom
Mr. R.A. HACKBUSCH	Canada
Mr. M.E. HOLMBLAD	Denmark
Mr. A.G. JENSEN	U.S.A.
Mr. J. LALOU	International Telecommunication Union
Mr. L. PODOLSKY	U.S.A.
Mr. R.D. POPPE	Norway
Col. J. READING	United Kingdom
Prof. U. LUELLE	Italy
Mr. E.F. SEAMAN	U.S.A.
Dr R. VIEWEG	German Federal Republic
Dr J.A. WILTGEN	Brazil
Mr. W.J. YOUNG	United Kingdom
Mr. L. [illegible]	Secretary, IEC
Mr. C.J. STANFORD	Central Office IEC

The meeting was called to order by Dr OSBORNE at [illegible] a.m.

He suggested that agreement should first be reached on the procedure to be followed in the meeting and proposed that a small working group be formed to draft the conclusions of the meeting. He pointed out that these were urgently required for presentation to the Committee of Action at its meeting on 9th July.

After some discussion it was agreed that Professor Bühler should be Chairman of the Working Group, with Messrs. Goldup, Seaman, Besson, Holmblad and Lalou as members.

Dr OSBORNE then proposed that Professor Bühler should take over the Chairmanship of the meeting as he was unfortunately obliged to leave. This was agreed and Professor Bühler took over the duties of Chairman.

01(Bureau Central / Central Office)238A

Septembre / September 1955

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

2 - MAY 15

Note rectificative au document 01(Central Office)238: Report of the London General Meeting June 28th-July 9th, 1955

Corrigendum to the Document 01(Central Office)238: Report of the London General Meeting June 28th-July 9th, 1955

Page 7 - 8ème ligne à partir du bas de la page :

Pour le Secrétariat du Comité d'Etudes No.23, Petit appareillage, lire : "Belgium" au lieu de "United Kingdom.

Page 7 - 8th line from end of page

For the Secretariat of Technical Committee No.23, Electrical Accessories, read "Belgium" instead of "United Kingdom".

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X-TK.A115 #35

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September, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

Draft Recommendations concerning methods
of designing and testing line traps
by . de QUERVAIN

2 - MAY 15

for Technical Committee No.14:
Teletransmission at High Frequency,
of the International Conference on Large Electric Systems

C O N T E N T S

Clause		Page
1	FIELD OF APPLICATION	2
2	DEFINITIONS	
	a) Line Traps and Tuning Apparatus	2
	b) Currents	3
	c) Protective Apparatus	3
3	DIRECTIONS FOR DESIGNING LINE TRAPS	
	a) General	4
	b) Determining the cross-section of the conductor	4
	c) Mechanical design	5
	d) Designing the insulation of the line trap	5
4	DIRECTIONS FOR DESIGNING TUNING AND PROTECTIVE APPARATUS ..	5
	a) Designing the protective apparatus	5
	b) Designing the tuning apparatus	5
	c) Final test for line traps	5
5	TEST METHODS FOR DETERMINING THE ELECTRICAL CHARACTERISTICS OF LINE TRAPS	
	a) Resonant frequency and the value of impedance at resonance	6
	b) Shape of the impedance curve as affected by the frequency on either side of the resonant frequency	6
	c) Measuring the service attenuation for the band width of the line trap	6
	d) Blocking attenuation of line traps	7

1(Austria)217

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May, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.1: NOMENCLATURE

2 - MAY 15
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Comments of the Austrian National Committee on the form of the Second Edition of the International Electrotechnical Vocabulary

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As the work of preparation of the IEV proceeds the Austrian Committee notices difficulties which have arisen because of the form of the vocabulary. Several of these difficulties are mentioned below.

The Austrian Committee proposes that the Secretariat of Technical Committee No.1 should prepare a document summarizing the principles which have been followed in determining the form of the IEV. This document would be most useful for all those National Committees acting as the secretariat of a group of the IEV, as well as those whose task it is to prepare the lists of terms in the supplementary languages.

Note.- These principles and rules for the form of the IEV are not to be confused with the directives for the work of Technical Committee No.1 given in Document 1(Central Office)210.

The following are the difficulties to which the Austrian Committee has referred:-

1) Agreement between two or more groups of the IEV. It often happens that the same notions appear in several groups of the IEV. It has been noticed that the terms or definitions relating to the same notion in the different groups of the IEV do not agree.
For example:-

16-05-015 (a) Ensemble de relais : Assemblage de plusieurs relais et accessoires placés sur un même support.
Relay set : An assembly of several relays and auxiliary components mounted together.

31-05-565 (b) Bloc de relais : Assemblage sur un même châssis amovible de plusieurs relais et appareils auxiliaires.
Relay "Block" : Assembly on the same frame of a number of relays and other apparatus.

05-30-060 (c) Entrefer : Interruption de faible longueur de la partie ferromagnétique d'un circuit magnétique.
Air gap : The short gap between the ferromagnetic parts of a magnetic circuit.

31-05-580 (b) Entrefer : Solution de continuité dans le circuit magnétique en fer où passe le flux effectif.
Air gap : The gap in the magnetic circuit through which the effective flux passes.

10-05-245 (d) A refroidissement séparé (machine) : Machine dont le refroidissement est assuré au moyen d'une force motrice non empruntée à son arbre ou au moyen d'un fluide de provenance extérieure autre que l'air.
Separately-cooled (machine) : A machine which is cooled by means of a motive force not taken from its own shaft, or by means of a fluid from an exterior source, other than air.

1(08)(France)217

2 - MAY 1955

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April, 1955

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.1 : NOMENCLATURE

International Electrotechnical Vocabulary : Group 08 - Electroacoustics

Comments of the French Committee
on Document 1(08) (Secretariat)227

During the meeting of Technical Committee No.29: Electroacoustics, held at The Hague in June, 1953, it was decided to include the study of the electroacoustic vocabulary in the programme of future work and to offer the services of Technical Committee No.29 to Technical Committee No.1 in order to progress and complete Document 1(08)(Secretariat)227. To this end France was asked to carry out this work in collaboration with the United Kingdom and the United States (see R.M.297).

The French Committee has therefore studied the document 1(08)(Secretariat)227 with the closest attention, and the result of its labours forms the substance of the present document.

1. In the first place the French Committee believes it should suggest modifications both to the terms themselves and also to the definitions of Document 1(08) (Secretariat)227.

With the aim of making it easier to read these modifications, whose scope covers practically the whole of the Secretariat's document, it has been thought desirable to reproduce, as Part One of the present document, the whole ensemble of terms and definitions of Document 1(08)(Secretariat)227, as modified by the French Committee, retaining the same numbering scheme. The proposed changes will thus be easily grasped by comparing the present document with that of the Secretariat.

2. In the second place the French Committee has judged it desirable to include in the international vocabulary a certain number of terms which did not figure in the document 1(08)(Secretariat)227. Some of these terms, together with their definitions, come, either directly or after some adaptation, from the American A.S.A. Standard Z.24 - 1 - 1951. Still other terms, however, are new. Part Two of the present document contains* these new terms and their definitions together with an indication of their provenance where this is the above mentioned American Standard.

3. Finally, the French Committee, having regard to the ensemble, constituted by Parts One and Two of the present document, suggests an overall rearrangement of the terms quoted therein, this arrangement forming the substance of Part Three of the document. In this third part, in the interests of simplification, only the terms themselves have been reproduced, without their definitions. It will be seen that the seven original sections of the document 1(08)(Secretariat)227 have been regrouped under the following five headings:-

Section 08-05 : General Definitions
Section 08-10 : Transmission systems and propagation of sound
Section 08-15 : Acoustical Apparatus
Section 08-20 : Recording and reproducing
Section 08-25 : Physiological acoustics.

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*) In the order in which they appear in Part Three of the document and having regard to those terms already figuring in Part One.

01(Central Office)242

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January, 1956

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMITTEE OF ACTION

Definition of tests - Comparative table

During the meeting of the Committee of Action in London, 9th July, 1955, the Central Office was asked to draw up a report concerning the terms and definitions used for the tests specified by the several IEC Technical Committees (see Minutes R.M.374/C.A., item 11, page 11).

The following comparative table contains extracts from the publications or draft recommendations drawn up by a number of Technical Committees, concerning the names and definitions of the different tests specified.

These tests all fall with one or other of the 4 following categories:-

Type tests
Routine tests
Sample tests
Acceptance tests

defined respectively under the references 05-41-100, 05-41-105, 05-41-110 and 05-41-115 of Publication 50(05), Fundamental definitions, drawn up by Technical Committee No.1. The table contains a column for each of these categories, each column being headed by the term adopted by Technical Committee No.1. In each column will be found the name adopted for the same category of test in the publication or the document quoted in the first column, together with the corresponding definition.

Publication 50(05) also contains the following definition under the reference 05-41-095:-

> "Prototype tests. The whole of the tests carried out on a single apparatus (or machine) or on several pieces of apparatus of the same type to ensure that the apparatus under test satisfies the specified working and all the conditions laid down, as regards design, dimensions, quality of the principal materials and workmanship."

This term is not defined in any of the other IEC publications or draft recommendations quoted and it is not in consequence included in the comparative table.

In accordance with the decision of the Committee of Action, this report is drawn to the attention of the National Committees and possibly Technical Committee No.1.

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INFORMATION ON THE GENERAL PROCEDURE FOR THE PREPARATION AND APPROVAL OF I.E.C. RECOMMENDATIONS

9(Belgium)210A

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

2 - MAY 15
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TECHNICAL COMMITTEE No.9: ELECTRIC TRACTION EQUIPMENT

Additional comments of the Belgian Committee on
Document C.M.T. 50, Rules for the testing of electric rolling
stock on completion of construction and before entry into service

---

Part I - Type tests

2) Running test on curved track

It should be specified that the test of entry into a curve for rolling stock with bogies can also be made by means of a swing bridge on which one of the bogies is placed, the other begie resting on a fixed track.

3) Weighing test

a) This is a relatively complicated test which cannot be justified in any case for routine tests.

This test should be made on the system of the purchasing administration and at their expense.

b) The condition that the lower tolerance on the adhesive weight shall be 1% seems to be severe as the majority of locomotives have all axles driving axles and a tolerance of plus 3% is allowed for locomotives and 5% for motor coaches.

Except in certain special cases it is considered preferable to increase this tolerance to at least 2%.

The rules assume that the load per axle will be specified by the Railway administration when the order is placed. It would be more logical that this should be done when an inquiry is made as to prices.

The margin of 2% allowed on the load per axle with respect to the average load of the driving axles appears to be small.

Within the possibilities of the traction motors to develop the effort it would be preferable for this value to be increased to ± 4 to 5%.

4) Test for steadiness of running

The last paragraph specifies the measurement of the amplitudes of relative movement of the bogies and the body.

The sort of tests to be specified and the measuring instruments to be used should be defined.

7) Braking tests

a) This is a relatively complicated test which is completely unjustifiable for routine tests.

Moreover, this test should be made on the system of the purchasing administration and at their expense.

X-TKI.1/15 #61

9(France)212

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

2 - MAY 15
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TECHNICAL COMMITTEE No.9: ELECTRIC TRACTION EQUIPMENT

Proposal for the inclusion in Publication 48:
Rules for electric traction motors, of stipulations
concerning traction motors supplied
with unsmoothed rectified d.c.

Because of the development of electric traction vehicles with a single-phase transformer and rectifier set supplied with single-phase alternating current which feeds the motors with a unidirectional but strongly pulsating current, it seems necessary to extend the rules of Publication 48 to cover these vehicles, as at present the rules apply only to d.c. and single or three phase a.c. motors.

To distinguish these motors the French Committee proposes that they be called "'undulating' current motors".

In point of fact the construction of 'undulating' current motors differs little, if at all, from that of d.c. motors.

The difference between the two types of motors is purely operational, supply with 'undulating' current causes some additional losses and slightly complicates the process of commutation with respect to operation with pure d.c.

This implies that although the range of type or routine tests for the two types of motor are identical certain tests, especially

- the temperature-rise tests
- the commutation tests
- the calculation of efficiency

should be made in principle with an 'undulating' current and not with pure d.c. if the motors are intended to be used on vehicles fitted with single-phase rectifiers.

However, as carrying out the tests with 'undulating' current would require extensive test bed facilities and it would be difficult to use a regenerative test method it would be permissible to carry out all the routine tests on motors with pure d.c. subject to the reservations

a) that the motors type tested and the first few of the motors routine tested should be tested with 'undulating' current

b) that the differences, in any case not very large, between the temperature-rises and the efficiencies at the same ratings when changing from 'undulating' to pure d.c. should be determined beforehand.

The French Committee considers that the technology of single-phase rectifier vehicles and their motors is now on a firm footing and that it is a question of urgency and importance to draw up the few additional rules for 'undulating' current motors.

The French Committee hopes, therefore, that this question will be placed on the agenda of the Munich meetings of Technical Committee No.9 and the C.M.T.

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38 (Secretariat)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.38 : INSTRUMENT TRANSFORMERS

Revised Secretariat Proposals for the Revision of
I.E.C. Publication 44
Recommendations for Instrument Transformers
(Part I)

The 1931 edition of Publication 44 envisaged the inclusion of transformers of higher grades of accuracy in succeeding editions and the present revision specifies such transformers.

The previously established method of distinguishing the classes of instrument transformers, whereby the class is designated by the permissible ratio error at rated current or voltage and at rated burden, has been continued but the Recommendations are now divided into three Parts as follows:-

Part I : Measuring Transformers

Section 1 : Current transformers
Section 2 : Voltage transformers

Part II : Protective Transformers

Section 1 : Current transformers
Section 2 : Voltage transformers

Part III : Capacitor Voltage Transformers

With the publication of these Recommendations, the 1931 edition of Publication 44 is superseded.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 9 : ELECTRIC TRACTION EQUIPMENT

Replies from the United States National Committee
to questions raised in the Minutes R.M.338/T.C.9
of the London Meeting.

New American Rules are in the final stages of preparation, namely: ASA-C35, AIEE 11, Rules for the power equipment of electrically propelled railway cars, railway locomotives, and coaches (trolley and prime mover).

The United States National Committee, to place itself on record, comments as follows on IEC Publication 48, basing its comment on the new American Rules. Reference will be made to these comments in subsequent proposals for "Rules for Auxiliary Machines" and "Rules for Electrical Transmissions of Vehicles with Diesel Engines".

CLAUSE 4 - CLASSES OF RATING

One Hour Rating

Almost all rotating traction equipment today is more highly ventilated than was true in the early days of railroading when the one hour rating was first adopted. As a result, capacities have been increased so that in most cases a machine of a given size will have more continuous capacity today that some years ago would be given as one hour capacity. The rate of heating has been increased in so doing, to a point that there is little difference between the one hour and the continuous values. As ventilation is further improved and thinner insulations developed, the one hour rating will have a progressively less significance.

The one hour rating is based on a cold start, something rarely encountered in present day railroading. Even where cold starts are probable, it is rare that they can be counted on all the time. There is also always a hazard that the one hour rating will be considered applicable by the operator regardless of the initial temperature conditions.

On any revision of specifications of this type, or any new ones, therefore, we recommend the basic rating be considered the continuous rating, rather than the one hour.

A one-hour heat run must always be started cold. On the test stand, if any testing has preceded it, several hours time are required to cool the machine before taking this test. If anything goes wrong or a check test is necessary, another long cooling period is required. All this must ultimately result in increased prices to the operator without serving any useful purpose.

We note that the continuous rating has been adopted for Aux. Rules Appendix II and as normal for the Diesel Rules, Appendix III.

40-2(Switzerland)6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 40: COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R.F. CABLES AND R.F. CONNECTORS

Proposals of the Swiss National Committee for Testing the Resistance to Hydrogen Sulphide of High-Frequency Connectors

Hydrogen Sulphide Test

1. The connectors to be tested shall be carefully cleaned in a solution of a wetting agent (e.g. a 1% "Teepol-Shell" solution in water), then washed in distilled water and dried under the standard atmospheric conditions.

Note: Care must be taken that the connectors are not soiled after being cleaned.

2. The connectors shall then be exposed to an atmosphere containing 0.1% by volume of hydrogen sulphide in air at a relative humidity of 95 + 2%. The duration of the test shall be ... hours. Half of the connectors shall be connected and half disconnected during the test.

Note: An example of a testing apparatus which will generate the prescribed atmosphere is described in the appendix.

3. After the exposure to hydrogen sulphide the connectors shall be visually *) inspected. There should be no serious discolouration of the contact surfaces.

4. Measurement of the contact resistance is under consideration (see work of Sub-Commitee 40-4, Swiss Document 40-4(Switzerland)1).

*) Details of the visual inspection under consideration.

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#65

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40-5(Secretariat)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE 40 - ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-5 - BASIC TESTING PROCEDURES.

DRAFT REVISION OF IEC PUBLICATION NO.68
BASIC CLIMATIC AND MECHANICAL ROBUSTNESS TESTING
PROCEDURE FOR COMPONENTS.

---

1. SCOPE

This publication describes standard general procedure for climatic and mechanical robustness tests, designed to assess the durability, under various conditions of use, of components for radio-communication equipment, including electronic devices employing similar techniques. Other tests, specific to the individual types of component are included in the relevant component specifications.

2. OBJECT

These basic testing procedures are designed to provide information on the following properties of components:

1. ability to operate under extremes of temperature, pressure or humidity, or certain combinations of these conditions

2. mechanical robustness.

To cover the variety of performance of different components under the tests laid down some of the tests have a number of degrees of severity. These different degrees of severity are obtained by varying the time, the temperature, the humidity or some other determining factor separately or in combination.

This publication shall be used in conjunction with the relevant component specification which will define the tests to be used, the required degree of severity for each of them and the permissible performance limits. The relevant specification will also specify any special procedure which may be required.

X-TK1/15
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39(Secretariat)23

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February, 1956

2 - MAY 15
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.39 : ELECTRONIC TUBES AND VALVES

Secretariat's proposal for measurement of direct interelectrode capacitances of electronic tubes and valves

---

Introduction

At the London meeting of Technical Committee No.39 in June/July 1955 Document 39(Secretariat)18 "Proposal for measurement of direct interelectrode capacitances of electronic tubes and valves" was discussed and it was decided that the Secretariat should prepare a new document which would contain all the decisions made during the meeting.

This document contains standard capacitance shields for outlines published in Publication 67 only.

A proposal for symbols for capacitances will be given later in a separate document.

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36(Secretariat)4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.36: INSULATORS

Note regarding the change to Clause 50.03
of Document 36(Central Office)10, proposed by
the Editing Committee at their meeting in Venice,
in September, 1955.

As was pointed out by the glass insulator manufacturers at the London meeting of Technical Committee No.36 on 4th July, 1955, there is no reason for carrying out the thermal test on glass insulators, as a general rule.

These tests were introduced into the rules for glass insulators with the sole object of making these as similar to the rules for porcelain insulators as possible.

The thermal shock test is essential for porcelain insulators as porcelain is an opaque material and at present there is no method of determining the homogenity of the porcelain. This test is superfluous for glass insulators of which the transparency allows the structural homogenity to be checked in an absolutely sure manner.

The fact that the thermal shock test was introduced into the rules for glass insulators with the sole object of unifying these with the rules for porcelain insulators is clearly demonstrated by the fact that such a test has never been specified for other applications of glass in the past, even for use in watertight floodlights and safety lamps where the conditions of use of the glass are much more severe, especially in the first case, than are met with in insulators.

This test could be completely deleted but if it were wished to retain it, it must be drawn up within the limits which the glasses can withstand taking into account the effective requirements under service conditions.

Work recently carried out by specialists in the subject (P. Schuep - Bullotin de la Société Française des Electriciens - Nov. 1953) has shown that the thermal shock caused by rapid immersion alternately into two baths of water one of which is maintained at a temperature of 20°C higher than the other corresponds to a variation of temperature of approximately 3 000°C per hour whilst the thermal shocks that occur in nature never exceed 15/20°C per hour.

It is for this reason that when the question was examined at the London meeting of T.C.36, the Committee decided to reduce the temperature difference for the test to 30°C for Glass of Category A (annealed lime soda glass).

The French delegation reserved the right to verify this limit as the French rules for the testing of glass insulators did not specify an immersion test but a cold spray after heating of the insulator.

X-TK-A 15
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35(Denmark)3

2 - MAY 15
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.35: PRIMARY CELLS AND BATTERIES

Comments of the Danish National Committee on document 35(Central Office)5: Proposals for the amendment of Document 35(Central Office)4

The Danish National Committee regrets that it has to vote against this document being published as an IEC recommendation for the following reasons:

After having received the U.S. comments on document 35(Central Office)4 the Danish National Committee has investigated the matter and has come to the conclusion that it will support the U.S. points of view as strongly as possible as regards testing methods.

It is of the utmost importance for the manufacturers of primary cells and batteries to use testing methods that as near as possible correspond to the actual use of the cells and batteries. For many years testing methods in this country have been based on discontinuous discharge with constant current, but lately, taking the international collaboration into consideration, we have considered different methods of discharge through constant resistance, and our experience - mainly reached in the past year - is that the U.S. methods of discharge form a very good basis for the evaluation of the performance of the cells and batteries in actual service. To-day when they have been used for more than 20 years in the U.S.A. no serious objection can be raised to these methods and they have been adopted in many countries outside the U.S.A.

We find that if the IEC recommendations introduce new and partly unknown testing methods, some of which we doubt will give results corresponding to actual service, it will not help the industry but only create confusion.

Furthermore we support the Netherlands' point of view considering the specification of a minimum discharge period. This is absolutely unnecessary and will lead to discussions between manufacturer and purchaser and will hold up the development.

If the document be approved the Danish National Committee requests that its point of view be expressed in the preface.

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40-3(Yugoslavia)1

2 - MAY 15
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40: COMPONENTS FOR ELECTRONIC EQUIPMENT
SUB-COMMITTEE 40-3 : PIEZO-ELECTRIC CRYSTALS

Reply of the Yugoslav National Committee
to the questions raised in Document 40-3(Secretariat)2

Referring to the standardization of load capacitances of parallel oscillators with quartz crystal units, which was discussed in the Crystal Sub-Committee meeting held in London from 28th June to 1st July, 1955, the Yugoslav National Committee submits herewith the following proposals:-

Proposal on Question 1

The Yugoslav National Committee proposes the adoption of the Table 3 with the following values of capacitances:-

20 pF
30 pF
40 pF
50 pF
100 pF

Commentary : During the last meeting of the International Electrotechnical Commission, agreement was not reached only for capacitances of 40 pF and 50 pF. We propose the adoption of both values for the following reasons:-

The value of 50 pF is in practice necessary for good frequency stabilization when the value of 100 pF could not be used by reason of reduced activity of crystal unit.

On the other hand the value of 30 pF is insufficient, especially where a large number of crystal units are to be switched in, and the value of 50 pF is too large, especially because of reduced activity. In this case the choise of the value of 40 pF gives the best compromise.

Therefore, we consider that for the practical use of the crystal units it is very useful to have the complete series of the capacitances mentioned on Table 3.

Proposal on Question 2

The Yugoslav National Committee proposes that the capacitances below 20 pF for the overtone crystal units ought to be standardized.

We propose the following values of capacitances:-

10 pF		10 pF
15 pF	or	14 pF
20 pF		18 pF

Commentary : The proposed values are in the practically used ranges and are convenient for the use.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : PIEZOELECTRIC FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-3 : CRYSTALS

2 - MAY 15
Corr.-----1956

Secretariat's proposal with regard to a marking code to be used for quartz oscillator crystals

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During the London meeting, it was decided that the Secretariat would redraft the clause on marking of oscillator quartz crystals, introducing a marking code based on the following principles (see R.M.401, Page 6):-

> The code will consist of three units; the first one indicating I.E.C. quartz crystal units for oscillators, the second one indicating holder type, and the third one indicating combined characteristics (article sheet).

After a full discussion of this subject, the Secretariat puts forward the following observations on the London decisions:-

The purpose of the marking code is to obtain a full definition of the crystal unit by means of a limited number of characters. For this purpose the above principles are fully adequate, on the condition that the code system is backed up by a system of article sheets. Since the considered code will be an international code, it is obvious that a corresponding I.E.C. system of article sheets will have to be made.

This point was also discussed at the London meeting (Minutes, Page 5), and it was there proposed to lay down a restricted number of types on I.E.C. article sheets and to ask the Central Office whether they could handle the registration of code numbers for the further types which are in extensive use.

The Secretariat is on the other hand of the opinion that the I.E.C. marking code should only be used for those crystal units which are covered by I.E.C. article sheets approved at the full meeting of I.E.C. Sub-Committee 40-3 and that the extension of the application to non-standard units registered by some administrative body would lead to chaos. It should be possible that, immediately after the group specification has reached the final stage, article sheets can be drafted and approved within a reasonable time, which would cover say 80% of all units manufactured.

It may be assumed that national marking codes will be needed even when the international code is generally accepted, because

a) there will be types which are in general use in one country only;

b) crystal units will obtain an international code number as soon as they are considered to be internationally accepted. Before this can be concluded they have to be already in extensive use in one or more countries which may require some kind of marking code for that unit;

c) a certain crystal unit as specified in the I.E.C. system of article sheets may differ slightly from the original national type or types (for example load capacitance of 30 and 35 pF). Until such time that the full class cover has been effected in the relative country, the national code has to be continued.

2 - MAY 15
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40-2(France)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40: COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R.F. CABLES AND R.F. CONNECTORS

Comments of the French Committee on Document 40-2(Secretariat)6: Points raised during the meeting of S.C.40-2 in June, 1955 in London, and Document 40-2(Secretariat)3.

The French Committee wishes to make the following comments on Document 40-2(Secretariat)6.

1. Document 40-2(Secretariat)6

1.1 and 1.2

As the method of determination of the characteristic impedance based on the measurement of the ratio of the velocity of propagation and the capacitance is the only one capable of practical application, no other method of measurement of the characteristic impedance for inclusion in an appendix is proposed.

1.3

In the separate appendix giving a certain number of methods of measurement the following principles should be taken into consideration:-

1) Distinction should be made between the methods which can be used for everyday tests and which must therefore be easy and rapid, and the longer and more difficult methods for laboratory uses.

2) Only those methods which have proved themselves in practice and of which the average accuracy is known should be included.

The above considerations lead to the following remarks on the different paragraphs of Clause 1.3.

a) See comment on paragraphs 1.1 and 1.2 above.

b) The method suggested by the United Kingdom appears to be too long and too difficult and is not suitable for approval tests.

c d e) No reply can be made until more information is available.

f) The corrosion test proposed by the Swiss Committee would certainly be useful but it would seem that a detailed study of the method and the results is necessary.

g) The method proposed, which is due to the RETMA, seems to be simple enough and could be accepted. However, the measurement should be made only on samples and not on all the lengths manufactured.

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9(France)21?

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TECHNICAL COMMITTEE No.9: ELECTRIC TRACTION EQUIPMENT

Comments of the French Electrotechnical Committee
on Document C.M.T.49: Contribution of the UIC
to the work of the International Mixed Committee on
Electric Traction Equipment (C.M.T.).

The French Committee agrees in principle with the comments made by the Belgian Committee in Document 9(Belgium)209.

However, it considers that the importance of the one-hour test for routine tests should be stated explicitly.

It is proposed therefore that the last two lines of the Belgian text should be replaced by the following:-

"The one-hour rating shall be determined during the prototype tests and may be used later for the routine tests."

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9(South Africa)205

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.9 : ELECTRIC TRACTION EQUIPMENT

Comments of the South African Committee
on Document C.E.T.50 : Rules for the testing of
electric rolling stock on completion of construction
and before entry into service

The following comments have been received from the South African Railways Association:-

Paragraph 14 - The high voltage test values do not line up with the Administration's requirements. The Administration usually specifies that these tests should be carried out at 10 500 volts a.c.

Paragraph 15 - A resistance value which can be taken as acceptable should be stipulated.

Paragraph 16 - No provision has been made for cases where the embedded temperature detector is not used.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.9 : ELECTRIC TRACTION EQUIPMENT

Proposals of the Italian National Committee
for the introduction into the rules for electric
traction motors (Publication No.48, Third edition, 1955)
of special provision to make them applicable to
compound motors

The following proposals have been drawn up by the Italian Committee in accordance with the request made to them at the Interlaken meeting, in June, 1953. They are submitted to the National Committees for discussion at the meeting of Technical Committee No.9 to be held in Münich on the 3rd and 4th July, 1956.

1. Clause 22 - Commutation tests - General

Add :-

"In motors with a separate or compound exciting circuit, such circuits shall be supplied by the same installations as those used for normal operation."

2. Clause 30 - Characteristic curves

Insert between the second and third paragraphs :-

"In the case of motors with separate excitation, the power used to supply the excitation is not fully included in the losses, but only that part corresponding to the I^2R loss in the separately excited windings of the motor under test."

3. Clause 31 - Methods recommended for the determination of characteristics

To be amended as shown below :-

31-1) D.C. motors

Regenerative method

The two motors shall be directly coupled by their armature shafts, the connections being in accordance with one of the following diagrams, which apply to d.c. motors.

Method I - Hopkinson parallel

The two motors connected in parallel shall be supplied at their nominal voltage while a booster circulates the desired current between them. The separate or compound exciting circuit, for motors so constructed, shall be supplied from a separate source.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.2 : ROTATING MACHINERY

2 - MAY 15

Comments of the U.S. National Committee on
Document 2(Secretariat)407, Secretariat proposal
for Section 4 of Publication 34: Irregularities of Waveform

The U.S. National Committee submits the following comments on the Secretariat proposal.

Paragraph 401 - Ratings of Machines

It is noted that the proposed requirements with respect to irregularities of waveform apply to machines rated at 200 kVA and above. In so far as the Telephone Influence Factor (TIF) is concerned, our new C50 Standards apply to machines rated at 62.5 kVA and above, but as will be pointed out later, we use different limits of TIF for different kVA ratings.

Paragraph 401 a) - Special Purposes

We are in agreement with the provision whereby machines intended for special purposes such as testing, use on isolated power circuits where exposures to telephone circuits are unusual, and so forth, are treated as special cases, subject to agreement between manufacturer and purchaser.

Paragraph 401 b) - Machines for Power Networks

We are in agreement with the requirement that generators intended for connection to power networks be tested at no load and at rated speed. Our TIF requirements also apply to synchronous motors which are driven as generators for the purpose of measuring TIF.

We wish to point out that neither our TIF nor the telephone harmonic factor (t.h.f.) proposed in Section 10A includes the relationship between the "Factor" as measured on a machine and the "factor" which would be measured on a network with the machine in normal operation. It is impractical to calculate this relationship and therefore we allow for it by permitting machines of smaller kVA ratings such as 200 kVA to have higher values of TIF than machines of larger ratings such as 10 000 kVA. To show how it works, we have found that when the TIF of large machines is limited to 5% the TIF of a power network supplied by these machines will be about 20, but if a machine of about 200 kVA is added the TIF on the network will not be increased above 20 even though the small machine has a TIF as high as 300.

It is noted that some recognition has been given to the size of the machine in specifying individual harmonics in 401 b) ii).

Paragraph 401 b) i)

We are in general agreement with the specification of irregularities of waveform in terms of a factor such as described in Section 10A. However, we do not believe that the particular factor proposed therein meets the requirements. Further, we question the limit of 0.5% specified for this factor, and its application to all generators rated at 200 kVA and above.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : PIEZOELECTRIC AND ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-3 : CRYSTALS

2 - MAY 15
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Proposal for the new text of Paragraph 2.4.1,
Crystal frequency and equivalent resistance,
based upon the IEC "Standards on piezoelectric crystals".

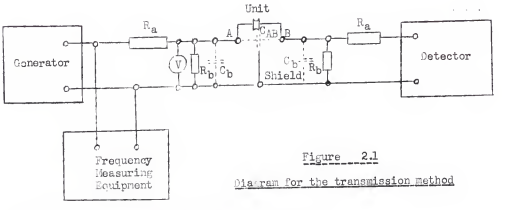

Figure 2.1

Diagram for the transmission method

2.4.1 - Crystal frequency and equivalent resistance

2.4.1.1 - The crystal frequency and the equivalent resistance shall be determined as a function of level of drive, the wave-form being substantially sinusoidal, with the transmission method described in 2.5.1.2. Alternatively, the specified frequency and equivalent resistance may be measured with any suitable method provided the results correlate with the results obtained with the transmission method to a degree consistent with the accuracy required.

2.4.1.2 - The measuring circuit consists of a variable frequency generator, voltmeter, frequency measuring equipment, measuring network in which the crystal unit under test is inserted, and detector, connected as shown in Figure 2.1. The crystal unit is connected to terminals A and B of the measuring network.

The resistance value of resistor R_a shall not be less than 10 times that of R_b.

For precision measurements, the measuring circuit shall furthermore comply with the following requirements. Where these requirements cannot be fulfilled, corrections according to Clause 2.4.1.5 shall be made if necessary.

a) The terminating resistances R_b shall be small compared to the inherent resistance R_1 of the crystal ($R_b << R_1$).

b) The stray capacitance C_b shunting the terminating resistors shall result in a reactance large compared with the terminating resistance

$$R_b \left(\frac{1}{\omega C_b} >> R_b\right)$$

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 40 : PIEZOELECTRIC COMPONENTS

SUB-COMMITTEE 40-1 : CRYSTALS

2 - MAY 15
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Systematic classification of electronic components

The second and third drafts of the Group Specification for quartz oscillator crystals contained a short clause on the classification into groups. During the meetings of sub-committee 40-1 the discussion on this clause had been referred to a later date, the Secretariat pointing out that this clause is common to all component specifications and that it relates to Publication No.68 on general test methods. The purpose of this document is to give further information on the background of this clause and to set forth the new text as accepted by Sub-Committee 40-1, Capacitors and Resistors, for publication in the first component specification which is about to be printed.

When taking the environmental tests of Publication 68 as a basis there are over 10 000 possible combinations of severities of the different tests. When considering the specification for one type of component, it may be found on technological grounds that some (for example, 10) of these combinations are realistic. The same applies to any specification, but when no co-ordination is enforced the greater part of these combinations will differ from one specification to another.

However, the components have to operate side by side in the same equipment, and so have to withstand the same conditions of use. Therefore a compromise has to be found between the divergence of combinations as dictated by component technology and the convergence as dictated by the use in equipment. During the meeting of Sub-Committee 12-3 (now 3.3.42-1) in Opatija, July, 1953, the United Kingdom put forward a proposal for a group equipment classification from which they deduced a component classification in which the severities of all tests were related to the three principle tests:- dry cold, dry heat and long term damp heat exposure. After discussion during subsequent meetings, this proposal was accepted by Sub-Committee 40-1 with very little change.

The greatest advantage of this classification system are that the severities of the three principal tests are readily translated into extreme conditions of use that the component will be able to withstand, and that it is possible to code the combinations or "groups" with a simple three-digit code number. Translation into industrial conditions is also furthered by the explanations of the table given in the text of the clause (see end of this document).

When considering such a classification system can also be used for crystal units, the following should be taken into account:-

It is already common practice to designate the units with the minimum and maximum temperature of the range. The moisture resistance is normally not used, but this may be explained by the fact that all metal cases and glass envelope units stand up to the highest severity of the damp heat test.

There are, however, units, especially those in moulded cases, which may not be fully tropic proof, and some development of similar types may be anticipated.

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40-3(Norway)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-3 : PIEZO-ELECTRIC CRYSTALS

Reply of the Norwegian National Committee to
the questions raised in Document 40-3(Secretariat)2

---

1) Table 3 containing 40 and 50 pF would be preferred, because the oscillator designer with given circuits is then freer to select the load capacitance most suitable for his particular stability requirements.

2) We have no definite proposal to make; however, if a lower value than 20 pF should be selected, it seems realistic to select it above 10 pF due to unavoidable stray capacitances commonly met in practice.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R.F. CABLES AND R.F. CONNECTORS

Note from the Italian National Committee
regarding the indirect method of measuring the
characteristic impedance of a coaxial cable

With regard to the stipulations of Clause 2.5 of Document 40-2(Secretariat)2, concerning the measurement of characteristic impedance, the Italian Committee wishes to communicate the following note on the practical ways of carrying out this measurement by the indirect method, as ordinarily performed in Italy. This method is used solely for cables with constant permittivity at a given frequency.

A. Formulae used

The formula used for the calculation of the characteristic impedance of a cable is as follows:-

$$Z_o = \frac{n.\ 10^6}{4.\ f_n.\ C} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where:-

Z_o is the characteristic impedance in ohms
f_n is the frequency in MHz (close to the specified value of 200 MHz) at which the input impedance of the cable is a minimum (The far end of the cable either being open or short-circuited)
n is the integral number of quarter-wavelengths corresponding to the frequency f_n contained in the length of cable under measurement
C is the capacitance in pF of the length of cable.

This formula is derived as follows:-

It is known that the characteristic impedance of a cable is given by the relationship

$$Z_o = \frac{1}{V.\ C_o} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

where:-

Z_o is in ohms
V (phase velocity) is in m/sec
C_o (capacitance per unit length) is in F/m

Now V, which is supposed to be constant for the frequency range used for the measurement, is given by the relationship

$$V = 2.l \triangle f \quad \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

where:-

$\triangle f$ is the frequency difference between two consecutive minima of the input impedance of the length of cable on which the measurement is made
l is the length of the cable.

40-2(Italy)4

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R.F. CABLES AND R.F. CONNECTORS

Comments of the Italian National Committee
on Document 40-2(Secretariat)3, Draft Specification for
Radio-Frequency Cable

---

a) It is suggested that the title be amended to read as follows:-

Flexible coaxial cable
Rated impedance 50 ohms
Diameter over insulation 7.25 mm

which states explicitly that the cable is of the coaxial type.

With regard to the name "flexible" we agree that it is a cable of the flexible type, but we consider that it would be desirable to give definitions, no matter how conventional they might be, as to what is meant by flexible, semi-flexible and rigid cables, in the general requirements for r.f. cables, Document 40-2(Secretariat)2. Those definitions are not at present given in the standards. If it is not possible to give these definitions it would be preferable not to mention these terms in the relevant cable specifications.

b) The following addition is proposed to Clause 1:-

"... production tests, tests marked with ++ shall be made on all lengths manufactured."

During the last meeting in London, mention was made of a certain number of tests, reduced to the absolute minimum, to be made on all the lengths manufactured and it was stated that those tests would be indicated in the relevant cable specifications. The text of this document makes no mention of this, such that the clarification suggested would be of advantage.

c) Clause 2 - Construction

In the item "outer conductor" we propose that it be specified that the copper wire from which the braid is made shall be annealed. It is also suggested that the mention of the braid angle should be deleted the requirements for filling factor and the attenuation being sufficient to guarantee a satisfactory braid. The manufacturer would have the advantage of more liberty in the use of the braiding machine.

In the item "outer protection" it is suggested that the nominal thickness of the sheath in mm, should be added above the words "black p.v.c." independently of the diameters already shown.

d) Clause 3 - Electrical tests

With regard to the tests given in this clause, we suggest that the following tests (to be made on all lengths) should be marked with the sign ++:-

Dielectric strength of insulation
Insulation resistance
Dielectric strength of jacket.

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40-2(Italy)5

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TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R.F. CABLES AND R.F. CONNECTORS

Comments of the Italian National Committee on
Document 40-2(Secretariat)4 : Proposal for type
indication of H.F. Cables

The Italian Committee is essentially in agreement with the proposals for the type indication of R.F. Cables.

However, it should be clearly specified that these indications apply only to coaxial type cables. For twin conductor cables another letter showing that it is a cable of this type should be introduced into the relevant type indication.

It is proposed that in all cases a number should be added to the type indication to show the sort of protection applied to the cable, instead of adding a number to the type indication only when several sorts of cable of the same type are available (armoured and non-armoured cables, etc.) Thus the Figure 1 would indicate cables with a simple p.v.c. sheath, Figure 2 would indicate cables with a p.v.c. sheath and a metallic protection and Figure 3 would indicate cables with a gas-proof sheath.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Shaft dimensions and fixing dimensions
of mechanically operated components

Second draft

Introduction

The first draft of this specification was discussed very briefly during the London meeting. It was decided that the Secretariat would prepare a new draft taking into account the decisions of that meeting and the comments submitted by the National Committees.

When doing so the Secretariat found that many details should be discussed first by the Sub-Committee 40-1 before it would be possible to make a new draft with a greater chance of it being more generally acceptable than the first one.

Therefore, the Secretariat decided to include all comments made in the second draft, together with remarks of the Secretariat and suggestions for modification of the first draft. The text of each clause as proposed now by the Secretariat follows immediately after each clause title and is typed inset.

The following comments were received:-

40-1(Austria)2, June, 1955
40-1(Japan)3, June, 1955
40-1(Switzerland)3, June, 1955
40-1(United Kingdom)4, June, 1955
40-1(U.S.A.)8, September, 1955

1. General

1.1 - Scope (unchanged). This publication includes recommendations for dimensions of shafts and for those dimensions which are important for the fixing of the component to the chassis of apparatus. The recommendations are applicable to components which are mechanically operated during normal use, such as variable resistors, variable capacitors and switches, intended for use in radio-communication equipment and in electronic devices employing similar techniques.

Note.- As far as fixing dimensions are concerned the present draft only covers components for central mounting.

1.2 - Conversion of dimensions (change underlined). The draft has been based on millimetre dimensions. The inch dimensions have been calculated exactly on the basis of 1 mm = 1/25.4 inch and have been rounded off to one more decimal than the original millimetre dimension in such a way that the tolerance range of the inch dimension falls within the tolerance range of the millimetre dimension. Where possible the millimetre dimensions have been so chosen as to restrict the tolerance loss as much as possible.

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40-2(Denmark)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2 : R F. CABLES AND R.F. CONNECTORS

Reply of the Danish Committee to the questions
raised in Document 40-2(Secretariat)7
Questionnaire concerning the standardization
of wave-guides

The Danish National Committee gives the following answers to the questions raised in Document 40-2(Secretariat)7:-

Question 1 : Yes.

Question 2 : Dimensions of waveguides and waveguide couplings (joints, junctions) and tolerances for these dimensions.

Question 3 : The series of dimensions given in the JAN Specifications forms a suitable basis for standardization, but this series gives very little overlapping, and the centre frequencies are in the radar bands, which makes the series unsuitable for communication purposes. We therefore propose a standard series that contains the JAN dimensions plus one dimension between each two consecutive dimensions of the JAN series.

Besides the usual height, which is about half the width, suitable for radar purposes, a much smaller height for communication purposes (e.g. radio links) should be standardized for each width.

It is desirable to standardize circular waveguides, especially in the millimetre region, with the development of long-distance telephony in view.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE No.40-2 : R.F. CABLES AND R.F. CONNECTORS

Reply from the Finnish National Committee to
the questions raised in Document 40-2(Secretariat)7:
Questionnaire concerning the standardization
of wave guides

Referring to Document 40-2(Secretariat)7, we beg to inform you that:-

1. The Finnish National Committee is in favour of an international standardization of wave guides.
2. We consider the following subjects to be the most important for standardization:-
   - dimensions of wave guides
   - tolerances and dimensions, twist and curvature
   - the quality of the inner surface
   - connection flanges
3. We have used the American wave guides in Finland and we hope that standards will be chosen in accordance with the American standards.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES No.40:
PIECES DETACHEES POUR
EQUIPEMENTS ELECTRONIQUES

TECHNICAL COMMITTEE No.40:
COMPONENTS FOR ELECTRONIC
EQUIPMENT

SOUS-COMITE No.1: CONDENSATEURS
ET RESISTANCES

SUB-COMMITTEE No.1: CAPACITORS
AND RESISTORS

SPECIFICATION POUR LES RESISTANCES FIXES AU CARBONE DU TYPE II

SPECIFICATION FOR FIXED CARBON RESISTORS TYPE II

Ce document a été approuvé par le Comité d'Etudes Nº 40 lors de sa réunion à Londres le 8 juillet 1955.

This document was approved by Technical Committee No.40 at its meeting in London on the 8th July, 1955.

Il est soumis aux Comités nationaux pour approbation suivant la Règle des Six Mois.

It is submitted to the National Committees for approval under the Six Months' Rule.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMITE D'ETUDES N° 40:
PIECES DETACHEES POUR
EQUIPEMENTS ELECTRONIQUES

SOUS-COMITE 40-1 : CONDENSATEURS
ET RESISTANCES

TECHNICAL COMMITTEE No.40:
COMPONENTS FOR
ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-1 : CAPACITORS
AND RESISTORS

SPECIFICATION POUR CONDENSATEURS AU MICA A REVETEMENT METALLIQUE DU TYPE RECEPTION

SPECIFICATION FOR RECEIVER-TYPE METALLIZED MICA CAPACITORS

Ce document a été approuvé par le Comité d'Etudes N° 40 lors de sa réunion à Londres le 6 juillet 1955

Il est soumis aux Comités nationaux pour approbation suivant la Règle des Six Mois

This document was approved by Technical Committee No.40 at its meeting in London on the 6th July, 1955

It is submitted to the National Committees for approval under the Six Months' Rule

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39/40(United Kingdom)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO 39 : ELECTRONIC TUBES AND VALVES

TECHNICAL COMMITTEE NO 40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

British comments on Document 39/40
(Secretariat)2, Secretariat Draft
Specification for sockets for electronic
tubes and valves

The British Committee has considered Document 39/40(Secretariat)2, Secretariat Draft Specification for sockets for electronic tubes and valves, and submits the following comments:-

General. In several places throughout the Specification there is a requirement that the socket should be mounted. In many applications sockets are not mounted, for example, sockets used on cathode ray tube bases. The requirements for the base socket to be mounted on a metal plate for testing purposes is not therefore completely realistic.

Preface The list of I.E.C. Publication No. 67 Sheets shows only certain versions of some bases. All versions should be included.

It is proposed that the small button miniature 7-pin base, the small button noval 9-pin base and the octal base, should be dealt with first.

Clause 1.2. Object, fourth line. The word "pressure" should be amended to "atmospheric pressure".

Clause 1.4. Socket nomenclature. In addition, there should be a reference to the relevant sheet or sheets of I.E.C. Publication No. 67.

Clause 1.5.3 In the second line, the classification number should be amended to read 6-4 and the word "last" should be amended to "centre".

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42(Secretariat)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 42: HIGH-VOLTAGE TESTING TECHNIQUES

Technical Notes to Table 63.71 in 42(Secretariat)1

In order to illustrate Table 63.71 in IEC TC 42(Secretariat)1 some measurements of full impulses and impulses chopped on the front have been made with measuring circuits having either a non-oscillating response or an oscillating response.

This report is only intended as technical information an should not be included in the IEC Rules.

Note Technique concernant le tableau 63.71 du 42(Secrétariat)1

Afin d'illustrer le tableau 63.71 des règles techniques du CE 42(Secrétariat)1, quelques mesures de chocs coupés sur le front ont été effectuées, en utilisant des circuits de mesure ayant soit une réponse non oscillante, soit une réponse oscillante.

Ce rapport constitue uniquement une information technique et ne devra pas être inclus dans les règles CEI.

On trouvera les commentaires en français des figures à la page 5-6.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 15 - INSULATING MATERIALS

Recommended Standard Conditions
for use during the testing and pre-conditioning of
electrical insulating materials

PREFACE

Technical Committee No. 15 have prepared recommendations for certain international standard methods for testing electrical insulating materials (e.g. for volume and surface resistivities), and are preparing similar documents for other methods of tests, (e.g. for electric strength and insulation resistance). In carrying out most electrical tests of this nature, and many others such as mechanical tests on absorbent materials, it is necessary to control the conditions of temperature, humidity, etc. of the ambient atmosphere or other medium to which the material is exposed before and during testing.

This document has, therefore, been prepared by the Committee to give recommended standard conditions for such testing and for pre-conditioning (i.e. procedure for conditioning prior to testing), and to detail recommended procedures for attaining these.

It is proposed that, as far as possible, specifications and other documents dealing with the testing of electrical insulating materials should specify conditions for testing and pre-conditioning selected from those given in this document, and that these conditions should be generally adopted when testing such materials and quoted when reporting results of such tests.

Technical Committee No. 15 recognize the need for unification of conditions, particularly atmospheric temperatures and humidities, for testing and pre-conditioning various materials and types of components and apparatus, and is co-operating to this end with Sub-committee 40-5 and the ISO Co-ordinating Committee (ATCO). This document specifies a number of the same conditions as already recommended in I.E.C. Publication No. 68, 'Basic climatic and mechanical robustness testing procedure for components', and will be revised as necessary to conform where possible with the final recommendations of IEC/SC. 40-5 and ISO/ATCO.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE 15 - INSULATING MATERIALS

Memorandum by the British Committee
on the procedure for the discussion of
Conditioning Requirements for Testing

The British Committee has prepared and circulated the Document 15(United Kingdom)9 . This is a revised version of the earlier document 15(United Kingdom)6.

The British Committee understands that steps are being taken by the I.E.C. to co-ordinate the viewsof TC 15 and TC 40 (and, if necessary, of other Technical Committees) regarding conditioning requirements for testing. Agreement on conditioning requirements for insulating materials is, however, regarded by the British Committee as a matter of urgency since standard conditions of temperature and humidity must be agreed for inclusion in documents already on the agenda for the Munich meeting of TC 15.

Moreover, no co-ordination of the views of the various Technical Committees interested in conditioning requirements can be achieved until the views of those Committees are known.

The British Committee therefore hopes that the National Committees will be able to study the Document 15(United Kingdom)9 in advance of the Munich meetings, and that an opportunity will arise for the document to be discussed by TC 15 before the Committee divides into Working Groups.

The British Committee considers that only in this way can the Working Groups of TC 15 be given general guidance on conditioning requirements to enable them to proceed with their work.Such a discussion would also, it is felt, be of assistance to whatever Committee is given the task of co-ordination.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.39 : ELECTRONIC TUBES AND VALVES

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 39/40: TUBE AND VALVE SOCKETS

British comments upon Document 39/40(Secretariat)1,
Secretariat Memorandum concerning
Gauges for Valve-holders

The British Committee has considered Document 39/40(Secretariat)1, Secretariat Memorandum concerning gauges for valve-holders, and submits the following comments:-

(i) Single-pin versus multi-pin gauges. Multi-pin gauges are preferred, since they simulate the actual conditions of use.

(ii) Use of rectangular co-ordinates versus pitch circle and angle for defining gauges for sockets. It is considered that the method adopted for defining gauges for sockets should be that used for the relevant valve base. The suggestion to use both systems and to indicate which system is given for information only, is not favoured.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO.39: ELECTRONIC TUBES AND VALVES

Observations of the British Committee on Document 39(Netherlands)10, Dutch Comments on 39(United Kingdom)30, Interconversion of Inch and Metric Dimensions.

The British Committee has considered Document 39(Netherlands)10, Comments of the Netherlands National Committee on 39(United Kingdom)30, Interconversion of inch and metric dimensions, and submits the following observations:-

Page 1, paragraph 1. In the system of conversion in use in Technical Committee No.39 the fineness of rounding off two limiting dimensions is not based definitely on the difference between them, i.e., the tolerance, except when converting fractional inches to millimetres. This is shown in the table on Page 1.

It is difficult to reconcile the first sentence of Paragraph 1 with the table which follows. It would seem that the statement at the beginning of paragraph 1 is based on a supposition that the inch dimensions will be expressed to such a number of decimal places as will indicate in a general way the magnitude of the tolerance.

The expression "accuracy of original size" is open to question. It presumably means the number of decimal places to which the size is expressed.

Page 1, paragraph 1a. The statement that "the British system makes no provision for dimensions on which no tolerance is given" is not entirely correct. Important dimensions defining the nominal positions of features, e.g. pins or holes round a circle, are covered by the British system. They are referred to as constructional dimensions in Rule 5.

It is true that some un-toleranced dimensions, such as single maximum or single minimum sizes, are not dealt with. It is suggested that provision be made eventually in the British system for converting such dimensions. The converted value might be expressed, for instance, to within ±½ of the size of the dimension.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ACTION

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Copie d'une lettre, datée du 22 mai 1956,
adressée par le Président du Comité International
Provisoire de Métrologie Légale, à Monsieur le Président
de la Commission Electrotechnique Internationale,
1, rue de Varembé, Genève (Suisse).

Monsieur le Président,

Le Ministre des Affaires Etrangères français vient de proposer aux différents pays mondiaux un projet de Convention créant une ORGANISATION INTERNATIONALE DE METROLOGIE LEGALE qui a reçu de la part de nombreux gouvernements un accueil très favorable.

En effet, pendant la période de signature qui s'est achevée le 31 mars dernier - 22 pays ont approuvé cet arrangement international :

Allemagne - Autriche - Belgique - Cuba - Danemark - Espagne - Finlande - France (métropole et territoires d'Outre-Mer, Maroc - Tunisie) - Hongrie - Inde - Iran - Monaco - Norvège - Pays-Bas - Pologne - Dominicaine - Roumanie - Suède - Suisse - Tchécoslovaquie - U.R.S.S. - Yougoslavie.

4 autres se sont inscrits à titre de correspondants : Jordanie, Grèce, Luxembourg, Royaume-Uni.

Par ailleurs, il semble que plusieurs nations encore soient intéressées par ce projet : Canada, Italie ... et adopteront par la suite la procédure d'adhésion pour faire aussi partie de l'institution.

En conséquence, l'Organisation existe dès à présent en puissance et la Convention entrera en vigueur 30 jours après le dépôt du 16ème instrument de ratification.

Cependant, il y a lieu maintenant de régler sa mise au point et les détails de son fonctionnement.

Pour mener à bien cette politique de création et pour le travail futur de l'Organisation, il serait utile au Comité de bénéficier de tous les conseils et de tout l'appui des institutions qui poursuivent une activité connexe à la sienne; ainsi pourrait-il être tenu compte des besoins et des désirs de chacun en même temps que s'amorceraient de fructueuses collaborations.

Déjà des contacts très étroits se sont établis dans divers pays entre les Comités Electrotechniques et les Services de Métrologie Légale, en particulier en matière de compteurs d'énergie électrique. Il en a été de même dans les récentes réunions du Comité 13 A de la C.E.I. et de son groupe d'experts.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMITTEE OF ACTION

Preparation of international recommendations on fans

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1. The Indian National Committee requests that a new Technical Committee be set up for formulating I.E.C. Recommendations on fans other than those of industrial type, such as ceiling fans, table-type fans, railway carriage fans and cabin-type fans. It is felt that it would be in the interest of international trade if such standards were developed.

2. The following scopes are suggested for ceiling fans and table-type fans:-

a) Ceiling fans - Electric ceiling fans of the propeller type and their associated speed regulators.

b) Table-type fans - Table-type electric fans and their associated speed-regulators covering table-, bracket- and cabin-type fans, but excluding large propeller-type fans and railway carriage fans.

The following Indian Standards:-

IS:374-1951 - Specification for Electric Ceiling Fans,
IS:555-1955 - Specification for Table-Type Electric Fans,

refer to these apparatus.

The International Recommendations should also include requirement for minimum air performance besides giving electrical and mechanical requirements.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.8: STANDARD VOLTAGES
CURRENT RATINGS AND FREQUENCIES

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Table of proposed standard frequencies

During the Philadelphia meeting in September 1954, Technical Committee No.8 proposed as standard frequencies the values given in the following table (See R.N. 377/C.E. 8):

Table of proposed standard frequencies

Electric traction & electric systems	Rayon Industry	Tools				Remote control		
			Non portable			Pilot wire	Main conductors	
		Portable	Serie I 50 c/s	Serie II 60 c/s	Aircraft		Serie I 50 c/s	Serie II 60 c/s
16 2/3	100	150	100	120		Values specified by the C.C.I.F.	3 1/3	100
							395	575
25	120	180	120-125					720
								870-900
50		200	150				427	
60		350-360	200				475	1 260
			250	180			487	1 620
			300	240	400		519	1 920
			400				571	2 160
			500	360			600	2 400
							603	2 880
				540			637	3 600
				720			661	
				1 000			725	
				1 440			750	
				2 160			765	
							787	
				2 880			1 050	
				3 420			1 350	
							1 600	
							1 800	
							2 000	
							2 400	
							3 000	

Generators for high frequency heating were not considered as the standardization of frequencies for this application is of no importance practically.

The National Committees are asked to examine this table and to submit comments thereon. In their replies, the National Committees are requested to indicate those frequencies that should be retained or deleted and to propose any additions that may be considered necessary. The list of standard values of frequencies can then be determined on the basis of the replies received.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO.39: ELECTRONIC TUBES AND VALVES

British Comments on 39(Secretariat)29,
Symbols for Interelectrode Capacitance

The British Committee has noted with interest the Secretariat proposal in Document 39(Secretariat)29 for symbols for interelectrode capacitance.

The adoption of such a system is, however, dependent upon agreement on the electrode symbols.

It is therefore proposed that work should commence upon the establishment of symbols for electronic tube and valve electrodes and, later, upon symbols for tube and valve parameters It is suggested that a small Working Party of the most interested countries should be set up to carry out this work. Presumably any letter symbols agreed by IEC/TC 39 would have to be submitted to IEC/TC 25, Letter Symbols, for approval.

The following proposals for letter symbols for electronic tubes and valves are submitted. These proposals are based on the B.S.1409:1950, Letter symbols for electronic valves:

1. Basic principles.

1.1 In choosing the symbols the convenience of their production with standard printer's type as well as on a typewriter has been borne in mind.

1.2 It is recognized that the need for symbols will arise from time to time for less common parameters. It is recommended that, as such needs arise, symbols should be so chosen that they do not conflict with the generally accepted symbols set out in this recommendation. In this way new symbols, consistent with this scheme, may achieve that general acceptance which is a sound prelude to standardization.

1.3 With the exception of symbols for voltage and current the following general rules have been adopted:-

a. Symbols applying to a valve tube or itself are denoted by letters in small type (printer's 'lower case').

b. Symbols applying to associated circuits are denoted by letters in capital type.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.39 : ELECTRONIC TUBES AND VALVES

The British Committee submits, for information, the following transistor terms and definitions, which are under consideration for adoption in the United Kingdom.

SECTION ONE : SEMI-CONDUCTOR MATERIALS

1. Semi-conductor. A crystalline material whose conductivity is due to the flow of electrons and/or holes, lies between that of metals and insulators, and increases with temperature for some temperature range.

(i) The conductivity of a semi-conductor increases when it is illuminated by light of sufficiently short wavelength.

(ii) The room-temperature resistivity of a semi-conductor is usually found to lie in the range of 10^{-3} to 10^{9} ohm cm.

2. Ionic conductor.)
Ionic semi-conductor.) A solid in which the electric conductivity due to the flow of ions, predominates over that due to the motion of electrons and holes.

3. Imperfection. Of a crystalline solid. Any deviation in structure from that of an ideal crystal.

Examples:-

Lattice vacancy..	(Lattice site from which an atom is missing)
Interstitial atom.	(An atom not at a lattice site)
Substitutional atom	(A foreign atom at a lattice site).

NOTE: An imperfection can cause hole or electron conduction.

4. Ideal crystal. A crystal which is perfectly periodic in structure, and accordingly contains no foreign atoms or other imperfections.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 39:ELECTRONIC TUBES AND VALVES

British Observations on Transistor Standardization.

The standardization of transistors and related semi-conductor devices is being studied in the United Kingdom.

The Joint AEIE/IEE Committee Report on proposed methods of testing transistors is under consideration, together with the comments in Document 39(Netherlands)11.

The observations of the Austrian and German National Committees, relating to transistor standardization, in Documents 39(Austria)1 and 39(Germany)18, respectively, have been noted.

Attention is drawn to Document 39(United Kingdom)41, British proposals for transistor terminology, which sets out the transistor terms and definitions under consideration for adoption within the United Kingdom. Work on definitions of transistor parameters and on their letter symbols is also in progress.

The British Committee is of the opinion that IEC/TC 39 is likely to be occupied for some time with matters relating to electronic tubes and valves, and therefore proposes that either a new Committee, or Sub-committee of IEC/TC 39, be set up to deal with transistors and related semi-conductor devices.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 39 : ELECTRONIC TUBES AND VALVES

British Proposals for Amendments to Base Pin Contours, as specified in I.E.C. Publication No. 67.

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At the time of issue of I.E.C. Publication No. 67, Dimensions of electronic tubes and valves, the British Committee was not able to accept completely the pin contours proposed for certain valve bases in Publication No. 67, and so different requirements for British pin contours were specified on some bases.

This matter has been under review in the United Kingdom, and the British Committee can now accept the American contours for the B7A, B7G, B8A, B8G and B9A bases, except that for the B7A and B9A the maximum "flat" dimension must be 0.025 in. for the British versions.

To implement this, it is therefore proposed that the following modifications be made to I.E.C. Publication No. 67:-

Sheet 67-1-9A(B3G). Dimension F should be amended to 0.012 in. minimum, 0.035 in. maximum.

An additional reference should be inserted to indicate a "flat" dimension of 0.035 in. maximum.

Note 3 should be replaced by the following two notes:-

"(i) This dimension may vary within the limits shown around the periphery of any individual pin. The surface of the pin shall be convex or conical in shape and shall not be brought to a sharp point.

(ii) This surface shall be flat".

(This note will have to be related to the "flat" dimension).

An enlarged separate drawing of the pin contour, as shown in the American Specification ET-103D, should be added.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.42 : HIGH-VOLTAGE TESTING TECHNIQUES

Comments of the German National Committee
on Document 42(Secretariat)1, Draft Specification
for High-voltage testing techniques, Part I,
Chapters I to V

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Item 11.05 - Visible Corona Limit

Replace "to the naked eye in the dark" by "under specified test conditions".

Item 11.06 - Audible Corona Limit

In the first paragraph, replace "in a room with low noise-level" by "under specified test conditions".

Item 11.07 - Alter Item 11.07 to 11.08 "Radio Noise".

Add as a new item, 11.07 "Ionization limit. The lowest voltage giving ionization, that are partial breakdowns of very small energy, measurable only by very sensitive devices."

Item 12.01, Paragraph 2

This remark is contradictory to I.E.C. Publication 71, V - General Testing Procedure, 4, beginning line 3:-

"For external insulation tested separately, five full waves of the specified amplitude shall be applied.

If no flashover takes place the external insulation is satisfactory. If more than one flashover takes place, the apparatus is considered to be defective.

If only one flashover occurs, ten additional impulses shall be applied. The external insulation is considered to be satisfactory if during these new tests no flashover occurs."

We recommend the above mentioned wording but replace in the last paragraph, in accordance with 12.01, the word "ten" by "five".

Item 13.13 - Wet Tests

In the fifth line, after "2.2 mm/min ±10% horizontal comp." add the wording "corresponding to a direction of about 45° to the vertical."

Item 24.0 - Application and disconnection of test voltage

We propose, in accordance with the wording of I.E.C. Publication No.75, Item 40.04 the following wording of this item:-

"Starting from a sufficiently low value to prevent flashover on the switching transient, a voltage, but not exceeding half the test voltage, shall be applied and continuously regulated to its final value by steps not exceeding 5% of the test voltage to reach the test voltage in a time not less than 10 seconds. After the test the energy stored in the test object and parallel capacitors (if present) should be discharged through a suitable resistor."

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.42 : HIGH-VOLTAGE TESTING TECHNIQUES

Comments of the Norwegian National Committee on
Document 42(Secretariat)1, Draft Specification
for high-voltage testing techniques

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11.02 - Withstand level (0% level) of a Test Object

Second paragraph : replace "a minimum value" by "a specified value".

11.04 - 100% Flashover Level of a Test Object

Second paragraph : replace "a maximum value" by "a specified value".

11 - General Definitions

It is proposed that the following clauses are added:-

11.08 - External Insulation

External insulation is the insulation of the part of apparatus consisting of gaps through air or across insulating surfaces in air, and subject at the same time to dielectric stresses and the effect of atmospheric and external conditions, such as humidity, dust, vermin, pollution, etc.

11.09 - Internal Insulation

Internal insulation is the insulation of the parts of apparatus which are not subject to the effect of atmospheric and external conditions such as humidity, dust, vermin, pollution, etc.

Table 12.01

The letters a and b are to be typed in column "Record" (see Clause 12).

It is proposed that a new column referring to the clauses under "General Definition" be added.

13.13 - Wet Tests

It is suggested that Line 6 be replaced by "Water resistivity: 90 - 110 ohm measured at the temperature of the water used during the test" and that Line 7 be replaced by "Water temperature: not differing more than 10 Centigrade degrees from the ambient air temperature, and the test object".

13.14 - Standard Atmospheric Conditions - corrections

It is suggested that it would be useful also to give the lower limit in Paragraph b).

It is presumed that Appendix 2 is under consideration.

13.15 - Tests on Internal Insulation

According to the proposed definition on external insulation the last sentence of this clause seems to be unnecessary and may be deleted.

22. Measurement of Test Voltage

The last paragraph of this clause should be covered by Chapter VII, "Standard Sphere Gap" and should be deleted.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TECHNICAL COMMITTEE No.42: HIGH-VOLTAGE TESTING TECHNIQUES

Comments of the U.S. National Committee on
Document 42(Secretariat)1 - Draft specification for
High-voltage testing techniques

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Overall the draft specifications are very comprehensive and satisfactory. There are some major points of disagreement as follows:

1. 13.13 Wet tests. Conditions as described differ radically from ASA rules. Until checks have been made it is proposed that both I.E.C. and ASA rules be included. ASA rules are:

Intensity	0.2"/min. ± 10%
Direction	45°
Resistivity .	17 800 ohms/cm^3 ± 15%
Water temperature	Room ± 15 °C
Pressure.	35-60 lbs./in.^{2}
Correction.	25 °C, 760 mm
Nozzle	Prescribed in ASA C-77
Time	10 sec.
Prior application . .	1 min.

The I.E.C. values also should contain duration of test.

2. 13.14 Humidity I.E.C. 11 g per m^3 at 20°C (.43 in Hg)
ASA 15.6 g per m^3 at 25°C (.6085in Hg)

This difference in standard humidity conditions accounts for as much as 5% in withstand or flashover values of a rod gap and must be reconciled. It is proposed that both I.E.C. and ASA values be published.

3. Wave shape voltage - The modification of this from 1/50 to 1.2/50 should be considered. For practical testing, particularly at the highest voltages, the longer wave front is more rational.

40.05 for front chopped impulses the reference points are 30 and 90.

40.07 for front chopped waves 1.67 the time between the 30 and 90 points.

Wave shape-current

50.02. We recommend that definitions be given as for voltage (See App. 1).

We recommend that front be defined as 1.25 times the time between 10% and 90% points provided that the standard wave shape is changed from 10/20 to 8/20 and 5/10 to 4/10. Maintaining the I.E.C. front definition and 10/20 wave would result in waves of 12.5/20 according to ASA definitions and would require a complete retesting and change in application practices and instruction. A 12.5/20 wave is less severe and would not be accepted by U.S. Utilities

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 33 : CONDENSATEURS DE PUISSANCE

Observations du Comité Electrotechnique Suisse
au document 33(Bureau Central)15: "Condensateurs
pour usage sous des conditions tropicales"

Art. 1.2

Le Comité suisse propose de s'en tenir à la version du document 33(Secrétariat)18 du 20 mai 1955, c'est-à-dire d'introduire seulement la limite de 50°C et de biffer celle de 45°C.

Art. 10.1

Le Comité suisse propose de remplacer les mots : "La température de cette enceinte est maintenue ..... pour 45°C" par les mots : "La température de cette enceinte est maintenue à 50 ± 3°C".

Art. 14.6

Le Comité suisse estime qu'il ne suffit pas d'indiquer la température ambiante maximum pour caractériser le condensateur pour conditions tropicales. Il propose de marquer un tel condensateur par un signe en couleur, par exemple verte. Ce signe pourrait par exemple contourner la plaque signalétique et remplacerait l'indication de la température ambiante maximum.

Art. 14.8

Le Comité suisse rappelle la décision intervenue à la séance du Comité d'Etudes N° 33 à Londres au mois de juillet 1955, procès-verbal R.N.394/C.E.33 du 6 février 1956, page 10, selon laquelle la tension de tenue au choc sera inscrite sur la plaque signalétique en remplaçant la tension nominale d'isolement.

Art. 18.4

Le Comité suisse estime que les deux premiers alinéas pourraient être biffés, le premier si seule la limite de 50°C est adoptée et le second parce que l'article 18.2b de la publication 70-2 de la CEI est valable aussi dans le cas de condensateurs pour conditions tropicales.

A la troisième ligne de 18.4b il y a lieu de remplacer "Niveau d'isolement plus élevé" par "tension de tenue au choc plus élevée".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.28: INSULATION CO-ORDINATION

Editorial comments by the British Committee
on Document 28(Central Office)12: Recommendations
for insulation co-ordination

Page 2 - Reference to page 11

In the English text, the term at present used does not include the word "voltage" as does the French version. The term "voltage coefficient of earthing" is therefore suggested.

Page 2 - Reference to page 15

The second paragraph is misleading and would not be clear to those who had not taken part in the discussions. The following wording is therefore proposed:-

> "The application of power-frequency withstand voltages differe in the current practice in Europe from that of the U.S.A. and Canada."

In the sixth paragraph the intention of T.C.28 would be better brought out if the phrase "such as required to demonstrate the integrity of the insulation" (integrity is not used in English in this senee) were deleted and the remainder, beginning at "accordingly" were revised to read:-

> "accordingly the various individual apparatus committees should decide the appropriate values which, for the time being, will only be found in the relevant I.E.C. Recommendatione for the different types of equipment."

Page 3 - Reference to page 17

For the third paragraph beneath the Table, the wording should be altered on the lines proposed above, namely:-

> "Therefore, for the time being, information will only be found in the relevant I.E.C. Recommendations for the different types of equipment."

Page 4 - Table and Notes

To prevent errors the values for full and reduced insulation should be on the same horizontal line and not staggered as at present.

The word "bis" is not used in English. No substitute is proposed, however, as the indicator "2" above is adequate as the same Note is involved in each case.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO.28 : INSULATION CO-ORDINATION

Comments submitted by the British Committee
on the proposed Application Guide, document
28(Secretariat)16.

General. It is extremely difficult to give in brief form "precise information for the use of non-specialised engineers" on insulation co-ordination. I.E.C. Publication No.71 is primarily for the use of other I.E.C. Committees dealing with apparatus specifications. The proposed application guide is unlikely to be of much value to such committees.

So far as system planning engineers are concerned, these are usually specialists who are already aware of the problems mentioned, and the brief guide will be of little value to them. Numerous publications already deal with the many specific considerations which must be taken into account. The British Committee cannot therefore support further work on an application guide of this form.

The following comments on individual clauses emphasize the limitations of the proposed guide:-

Clause I. The meaning of the first paragraph is not clear, as the voltages of power systems are already covered by I.E.C. Publication No.8, and does not include any reference to the coefficient of earthing of the system.

Should the words "voltage steps" be "insulation levels"?

Clause II. This merely lists well-known factors, but gives no guidance as to how the choice of insulation levels shall be made.

Clause III. The note is not clear and gives no guidance.

Clause IV. While the 20% margin is desirable it must be recognized that the sparkover and residual voltage values of lightning arresters have only been reduced to the present level during the last few years. Thousands of earlier models gave satisfactory protection in many installations with margins less than 20%.

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8-1(Finland)3

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TECHNICAL COMMITTEE No.8 : STANDARD VOLTAGES, CURRENT RATINGS AND FREQUENCIES

SUB-COMMITTEE 8-1 : NOMINAL SYSTEM VOLTAGES

Comments of the Finnish National Committee
on Document 8-1(France)3, Proposals of the French Committee
for the future work of Sub-Committee 8-1

The Finnish National Committee has the following opinion concerning the proposal made in Document 8-1(France)3:-

The French Committee has proposed that a new inquiry to the different countries should be made concerning nominal system voltages, and that the answers should be based on effective measurements.

The Finnish National Committee suggests that this inquiry should be postponed until the French Committee has completed its measurements in France. When the inquiry is eventually sent to the different countries, the answer of the French National Committee to the inquiry should be simultaneously distributed.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40: ELECTRONIC COMPONENTS

SUB-COMMITTEE 40-3: CRYSTALS

Answers received to the questionnaire
40-3(Secretariat)2
relating to the standardization of load capacitances for quartz
crystal oscillators to be used in parallel
resonance oscillators

The following answers have been received:

Letter of Austria of January 25, 1956
40-3(Denmark)1 of March 1956
40-3(France)1 of March 1956
40-3(Italy)1 of March 1956
40-3(Japan)2 of April 1956
Netherlands
40-3(Norway)1 of March 1956
40-3(Sweden)1 of March 1956
40-3(United Kingdom)1 of March 1956
Letters of USA of January 20 and February 14, 1956
40-3(Yugoslavia)1 of March 1956

Question 1 National committees stated their preference as follows:

In favour of table 1 (20,30,40,100 pF) - France
In favour of table 2 (20,30,50,100 pF) - Italy, Sweden, United Kingdom, USA,
In favour of table 3 (20,30,40,50,100 pF) Denmark, Japan, Netherlands, Norway, Yugoslavia.

No preference: Austria

Reasons: 1 France 30 pF should be indicated as "preferred" and is considered to cover the majority of cases. 40 pF covers all other cases, with 100 and 20 pF to be used in extreme cases.

2. Sweden proposes the addition of 70 pF since in oscillators for comparatively low frequencies the total capacitance of ovens, switches, etc. often exceeds 50 pF and 100 pF is neither necessary nor desirable

USA Difference of the stabilization effect between 40 pF and 50 pF is not sufficient to justify inclusion of both values, and 40 pF has not been required for switching purposes.

3. Denmark 30 pF is considered as preferred value. In special cases (e.g. complicated switches) higher capacitance is necessary. Since activity is strongly dependent on load capacitance, interval between 30 and 50 pF is too big and 40 pF is preferred, but 50 pF cannot always be avoided. Interval between 50 and 100 pF seems justified.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION
TECHNICAL COMMITTEE No. 3 : GRAPHICAL SYMBOLS
Translation from

Swedish Electrotechnical Standards (SEN 4201, Graphical Symbols for Telecommunications and SEN 1 - 1950, Graphical Symbols for Heavy Current.)

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A. SEN 4201, chapter 8 and parts of chapters 5, 6 and 19

When drawing symbols for thermionic valves lines of different thicknesses should be used as follows:

a) Thick lines for envelopes[1], grids, anodes and cathodes (with the exception of directly heated cathodes) and for screening and controlling solid electrodes.

b) Thin lines for leads to and between electrodes and for directly heated cathodes (filaments).

When there may be risk for confusion anodes may be drawn with extra thick lines.

The symbols shown on the following pages are drawn with an indirectly heated cathode, symbol 815. For a valve with a directly heated cathode symbol 814 is used, as is shown in symbol 827.

1) When part of the envelope is of metal this is indicated by an extra thick line.

Nr	Symbol	Meaning	Remarks
801		Valve envelope, evacuated	When the valve comprises a large number of electrodes the oblong symbol is preferred.
802		Valve envelope, evacuated, with screen	Alternative symbol to be used if the screen is inside the valve envelope: (The symbol may also be used for an auxilliary electrode on the envelope). If there is no risk for confusion part of the screen may be omitted.
803		Valve envelope, evacuated, of metal	

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12 RADIOCOMMUNICATIONS

SUB-COMMITTEE 12-1 MEASUREMENTS

Comments of the U.S. National Committee on Document
12-1(Secretariat)19
Recommended Methods of Radiation Measurement

General Comments

In general the basic philosophy of the I.E.C. seems to be to consider the worst possible conditions, rather than attempt to achieve methods which are practical and yet adequate. Thus the proposed procedures are frequently much more elaborate than those described in the I.R.E. Standard.

Because of the difference in equipments used in the U.S. as against those in some European countries there will probably be somewhat different standards until standards have been accepted in other fields: Examples are as follows

(1) The impedance of most signal generators and other measuring equipment in the U.S. is standard at 50 ohms. This also applies to coaxial cables. (There are some 70 ohms generators and cables). Then it will probably be undesirable to use the value of 80 ohms used a number of places in the proposed draft. (Other countries probably would use 60 ohms).

(2) With regards to time-base radiation the proposed draft covers 150 to 1605 kc/s while in the U.S. 450 kc/s to 25 kc/s is considered. The extension to 150 kc/s in Europe is probably due to the lower frequency broadcast services in use there, and the extension to the higher frequencies in the U.S. involves protection to services which in Europe may not need protection.

(3) The different constants for the artificial mains network may simply be a matter of judgment but may also arise from differences in wiring practice, probable loads on circuits, etc. There may also be some difference of opinion as to the concept of what the artificial mains should represent. One view is that it should represent the actual mains impedance, but a second, and more realistic view so far as interference is concerned, is that it should represent the mutual impedance between the circuit directly excited and the one on which interference is experienced, assuming the interference to be produced to a device located on another circuit, as is generally the case.

(4) The prevailing test conditions may be different. For example, the levels of prevailing signals encountered at measuring locations in the U.S. in the band 540 to 1600 kc/s is high and for practical reason the manufacturers have generally resorted to screen room techniques rather than those outlined in the draft.

The measurement set-up of Clause 5 generally appears preferable to that of Clause 4.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12 : RADIO-COMMUNICATION

SUB-COMMITTEE 12-1 : MEASUREMENTS

Comments of the U.S. National Committee on Document 12-1(Poland)1, Definition and measurement of the "usable" sensitivity of the vision channel of television receivers

---

The title of the subject document is "Definition and measurement of the 'usable' sensitivity of the vision channel of television receivers". Apparently this is intended to apply to Document 12-1(Secretariat)16 as revised at the London meeting.

Document 12-1(Secretariat)16, Recommended Methods of Measurement on Receivers for Television Broadcast Transmissions, contains a paragraph, 3.2, Gain limited sensitivity, and a paragraph, 3.2, Noise limited sensitivity. Measurements made in accordance with the definitions and techniques described in these two paragraphs completely specify the lowest signal input which will produce the standard image (or the signal output corresponding to the standard image), and in addition give the p.p. signal/r.m.s. noise ratio as a function of the input signal level. Another paragraph, 3.4, Synchronizing sensitivity, gives the level at which "the synchronization just loses control, completely or partly, causing the picture quality to become unacceptable".

The measurements detailed in Document 12-1(Poland)1 differ from Document 12-1(Secretariat)16 as follows:-

1) "Quasi-peak" amplitude of the noise is used instead of r.m.s. noise.

2) The term "usable" sensitivity is defined in an arbitrary manner as the lowest input signal required to achieve standard light output, for which the p.p. signal/quasi-peak noise ratio is not less than 20 db, and for which noise does not interfere with the picture stability.

After careful review of the subject proposal, it is felt that the existing I.E.C. definitions of gain-limited sensitivity, noise-limited sensitivity, and synchronizing sensitivity adequately describe the sensitivity of a television receiver, and that the introduction of the new term "usable sensitivity", either to replace or supplement the existing definitions, would serve no useful purpose.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 12 - RADIOCOMMUNICATIONS

SOUS-COMITE 12-1 : MESURES

Observations du Comité français sur les documents 12-1(Bureau Central)5 et 12-1(Bureau Central)9 "Méthodes recommandées pour les mesures sur les récepteurs radiophoniques pour émissions de radiodiffusion à modulation de fréquence"

Le Comité français propose les modifications suivantes aux documents 12-1(Bureau Central)5 et 12-1(Bureau Central)9.

3.8 - Antenne fictive - Modifier comme suit le texte français :

L'antenne fictive est un circuit qui, pour les mesures, remplace l'antenne du récepteur et sa ligne de transmission associée.
(Voir remarque dans 12-1(United Kingdom)9.

6.2 - Mesures avec plus d'un signal

Pour tenir compte de la remarque figurant dans le document 12-1(United Kingdom)9, il est proposé de rédiger comme suit le 2ème alinéa :

"Dans cet exemple, on obtient les valeurs des signaux d'entrée, correspondant à chaque générateur, en multipliant la valeur de la force électromotrice, lue sur les générateurs, par le coefficient 0,5 et celle de la puissance disponible par le coefficient 0,25 (voir articles 6.1 et 7.1).

11.4 - Sensibilité d'écart - Rétablir la phrase suivante oubliée dans le texte français :

"L'un des niveaux de puissance d'entrée recommandés, pour lesquels on obtient la puissance de sortie normale, tous les organes étant réglés .....

17.1 - Définition - (Brouillage sur la fréquence intermédiaire)
et
18.1 - Définition - (Brouillage sur la fréquence image)

Compléter comme suit la dernière phrase de chacun de ces articles :

"Le signal brouilleur, à la fréquence intermédiaire (image), doit être modulé en fréquence, au même taux et à la même fréquence que le signal utile.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12: RADIOCOMMUNICATIONS

SUB-COMMITTEE 12-1: MEASUREMENTS

Comments of the German National Committee
on Document 12-1(Central Office)7/7A.

The German Committee has considered Document 12-1(Central Office)7/7A "Fifth draft of Recommended methods of measurements on receivers for television broadcast transmissions" and gives approval to that document under the Six Months Rule, subject to the following amendments.

Clause 1.4.8.3

In accordance with the proposed amendment of the FM document the following amendment should be made: The intermediate frequency used should be given with the results.

Clause 1.4.9

is the term acceptance angle unambignous?

Clause 2.3.3.2 5th paragraph, last line:

CH = ID should be CH = HD, later on Vertical Pincushion Distortion B_V should be C_V

Clause 2.5.5.2

should be amended as follows:
the method of measurement indicated in Clause 2.4.1.2 shall be used the test pattern, however, shall be according to Fig. 2.5.4.2

Clauses 2.5.7.1 and 2.5.7.2

In 2.5.7.1 the angle of incidence is mentioned, whereas in 2.5.7.2 it is not mentioned. The conditions of measurement should be better defined. For the benefit of the user a short explanation of standard illuminant C should be added.

Clause 2.9, Quality of Interlace

It is considered to be unnecessary, first to convert the distances into a percentage and then give the ratio of the percentage values. It seems to be more straightforward to give the ratio of the distances directly.

Chapter 3, Sensitivity

The sensitivity of the receiver should be measured in each of the channels for which the receiver has been designed, at least in accordance with one of the methods proposed.
The same applies to the coefficient of reflection (Clause 3.5)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12: RADIOCOMMUNICATIONS

SUB-COMMITTEE 12-1: MEASUREMENTS

Comments of the German National Committee
on Document 12-1(Central Office)9

The German Committee has considered Document 12-1(Central Office)9 - Fourth draft of the Recommended methods of measurements on receivers for frequency-modulation broadcast transmissions - and gives approval to that document under the Two Months Rule, subject to the following amendments.

Clause 4.8

In order to implement the statement on the discrepancies between the different tuning positions mentioned in 4.8 last paragraph to all the measurements and graphs concerned, the IF which corresponds to the tuning position chosen either directly or as a reference point should be given with the results. The value of the IF could be either calculated as the difference between the input signal frequency and the oscillator frequency or by measuring the IF directly.
This proposal corresponds to the method adopted in the TV-Document 12-1(Central Office)7 clauce 1.4.8.2.
The following clauses are considered to be affected by the proposal: 4.8.2, 4.8.1, 4.8.3, 8.2, 8.3, 13.2, 13.3, 14.2, 14.3, 19.2, 19.3, 19.4, 20.2, 28.4.2, 28.4.3, 28.5, 28.6, 28.9, 31.2, 32.2, 37.2 and should be amended accordingly.

Clause 5.2

In any case a level different from 50 mV is chosen, the reason should be given

Clause 19.2 last paragraph

In order to meet the objections against the accuracy of the display-method, the improvement by using filter networks to suppress the F -components should be more emphasized at least by putting the proposal into a separate paragraph and give at least the wording of the third draft which gives some more information, preferably it should give even more detailed information.

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12-1(Norway)7

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12: RADIOCOMMUNICATIONS

SUB-COMMITTEE 12-1: MEASUREMENTS

Preliminary comments of the Norwegian National Committee on
on Document 12-1(Central Office)7

Clause 4.9 - Subjective tests on susceptibility to interference.

Recent investigations have shown the the "annoyance"value of a pulse-type interfering signal in the audio channel is dependent on the pulse width.

Until an agreement on the type of test signal to be used can be reached, it would facilitate the comparison of measuring results from different authorities if the pulse width of the test signal used were known.

The Norwegian National Committee, therefore, proposes that the following sentence be added to the last paragraph on page 20: "The pulse width and the repetition rate used should be stated".

Clause 2.9 - Quality of synchronization

Page 19, "Pulling on vertical synchronizing impulses" shows a disagreement with Figure 2.9 c, as the distances there shown are called δ_1 and δ_2 as compared to τ_1 and τ_2 in the text.

With regard to the sound channel, we note that the proposals adopted are based on I.T.U. Publication 6 , on Document 12-1(Central Office)5 and the modifications thereto contained in Document 12-1(Central Office)6. We have no objection to this part.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12: RADIOCOMMUNICATIONS

SUB-COMMITTEE 12-1: MEASUREMENTS

Comments of the U.S. National Committee on Document
12-1(Secretariat)1
"Recommended Methods of Radiation Measurement

General Comments

In general the basic philosophy of the I.E.C. seems to be to consider the worst possible conditions, rather than attempt to achieve methods which are practical and yet adequate. Thus the proposed procedures are frequently much more elaborate than those described in the I.R.E. Standard.

Because of the difference in equipments used in the U.S. as against those in some European countries there will probably be somewhat different standards until standards have been accepted in other fields: Examples are as follows

(1) The impedance of most signal generators and other measuring equipment in the U.S. is standard at 50 ohms. This also applies to coaxial cables. (There are some 70 ohms generators and cables). Then it will probably be undesirable to use the value of 80 ohms used a number of places in the proposed draft. (Other countries probably would use 60 ohms).

(2) With regards to time-base radiation the proposed draft covers 150 to 1605 kc/s while in the U.S. 450 kc/s to 25 Mc/s is considered. The extension to 150 kc/s in Europe is probably due to the lower frequency broadcast services in use there, and the extension to the higher frequencies in the U.S. involves protection to services which in Europe may not need protection.

(3) The different constants for the artificial mains network may simply be a matter of judgment but may also arise from differences in wiring practice, probable loads on circuits, etc. There may also be some difference of opinion as to the concept of what the artificial mains should represent. Our view is that it should represent the actual mains impedance, but a second, and more realistic view so far as interference is concerned, is that it should represent the mutual impedance between the circuit directly excited and the one on which interference is experienced, assuming the interference to be produced to a device located on another circuit, as is generally the case.

(4) The prevailing test conditions may be different. For example, the levels of prevailing signals encountered at measuring locations in the U.S. in the band 540 to 1600 kc/s is high and for practical reason the manufacturers have generally resorted to screen room techniques rather than those outlined in the draft.

The measurement set-up of Clause 5 generally appears preferable to that of Clause [illegible].

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 12 - RADIOCOMMUNICATIONS

SOUS-COMITE 12-1 : MESURES

Observations du Comité français sur les documents 12-1(Bureau Central)7 et 12-1(Bureau Central)7A "Méthodes recommandées pour les mesures sur les récepteurs pour émissions de télévision"

Le Comité français propose les modifications suivantes aux documents 12-1(Bureau Central)7 et 12-1(Bureau Central)7A.

1.3.7 - Pour rendre plus clair le texte de cet article il est proposé de le modifier de la manière suivante :

- Luminance - Quotient de l'intensité lumineuse dans une direction donnée d'un élément de surface infinitésimal par la surface de la projection orthogonale de cet élément sur un plan perpendiculaire à la direction considérée.

En outre, il y aurait lieu d'utiliser un autre symbole pour désigner la Luminance, le symbole L étant également celui de l'inductance propre.

1.4.9 - Mesure de la luminance - Ligne 3.

Remplacer le terme "angle d'entrée" par angle d'ouverture.

2.4.1.3 - Représentation graphique - 2ème alinéa

Remplacer "lorsque cela s'applique" par: "s'il y a lieu".

2.5.8.1 - Caractéristique directionnelle de l'écran

Le texte actuel de la définition paraît ambigu en l'absence de définition d'un écran diffusant idéal. Il semble qu'il faille comprendre :

"La caractéristique directionnelle d'un point particulier de l'écran est définie par le rapport de la luminance, pour une image blanche en ce point, observée dans une direction faisant un certain angle avec l'axe optique, à la luminance du même point observée dans une direction normale à la surface de l'écran, les observations étant faites en l'absence d'éclairement ambiant".

3.2.1 - Définition - Ajouter à la fin de cet article :

"Lorsque tous les organes de réglage sont placés dans la position qui correspond au maximum d'amplification (voir 10.3.1).

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.12 : RADIO-COMMUNICATION

SUB-COMMITTEE 12-1 : MEASUREMENTS

Comments of the U.S. National Committee on
Document 12-1(Poland)1, Definition and measurement
of the "usable" sensitivity of the vision channel of
television receivers

The title of the subject document is "Definition and measurement of the 'usable' sensitivity of the vision channel of television receivers". Apparently this is intended to apply to Document 12-1(Secretariat)16 as revised at the London meeting.

Document 12-1(Secretariat)16, Recommended Methods of Measurement on Receivers for Television Broadcast Transmissions, contains a paragraph, 3.2, Gain limited sensitivity, and a paragraph, 3.2, Noise limited sensitivity. Measurements made in accordance with the definitions and techniques described in these two paragraphs completely specify the lowest signal input which will produce the standard image (or the signal output corresponding to the standard image), and in addition give the p.p. signal/r.m.s. noise ratio as a function of the input signal level. Another paragraph, 3.4, Synchronising sensitivity, gives the level at which "the synchronization just loses control, completely or partly, causing the picture quality to become unacceptable".

The measurements detailed in Document 12-1(Poland)1 differ from Document 12-1(Secretariat)16 as follows:-

1) "Quasi-peak" amplitude of the noise is used instead of r.m.s. noise.

2) The term "usable" sensitivity is defined in an arbitrary manner as the lowest input signal required to achieve standard light output, for which the p.p. signal/quasi-peak noise ratio is not less than 20 db, and for which noise does not interfere with the picture stability.

After careful review of the subject proposal, it is felt that the existing I.E.C. definitions of gain-limited sensitivity, noise-limited sensitivity, and synchronizing sensitivity adequately describe the sensitivity of a television receiver, and that the introduction of the new term "usable sensitivity", either to replace or supplement the existing definitions, would serve no useful purpose.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No.9: MATERIEL DE TRACTION ELECTRIQUE

Remarques et propositions du Comité allemand au sujet de la Publication 40, troisième édition, et des documents 9(USA)200 - 9(France)212 - C.E.E.T. 50 - 9(Belgique)210 - E.T.S.C.I.T.46

Art. 4 :

Pour fixer les propriétés thermiques d'un moteur, il faut connaître sa puissance en régime continu et en régime intermittent. L'une de ces puissances en régime intermittent est la puissance unihoraire. Dans beaucoup de régimes la charge des moteurs correspond exactement à la puissance en régime unihoraire. Par conséquent, il n'y a pas d'objections à formuler contre le maintien de la puissance en régime unihoraire comme puissance nominale.

Art. 9 et 10 :

En introduisant la classe d'isolation H, on devrait, d'après la proposition en 9(USA)209, prendre en considération que la durée de la vie de l'isolation des moteurs de traction est en général moins limitée par la résistance thermique que par la résistance mécanique de l'isolant à cause de la formation de fentes, de l'usure par frottement etc. Une élévation de la température admissible du collecteur dépend non seulement de l'influence sur la résistance mécanique du collecteur, mais aussi de l'influence sur la commutation elle-même et, partant, sur l'usure du collecteur et des balais. Dans ce cas, il faut tenir compte aussi des frais d'entretien plus élevés.

Art. 15 :

Nous nous joignons à la proposition en 9(USA)209, d'après laquelle les éléments thermoélectriques seraient à employer pour la mesure de température des collecteurs et des bagues à contact glissant.

Art. 19 et 20 :

Nous sommes d'accord avec la proposition en 9(USA)209.

Art. 25 :

Nous sommes d'accord avec la proposition en 9(USA)209.

9(France)212 :

Nous estimons que pour les moteurs de traction à courant continu travaillant avec du courant ondulé, le texte suivant serait suffisant:

> "Pendant l'essai de types, les moteurs sont essayés dans les conditions survenant dans les véhicules. Tous les autres moteurs sont essayés uniquement avec du courant continu".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO.17 : SWITCHGEAR AND CONTROL GEAR

SUB-COMMITTEE 17A : HIGH-VOLTAGE SWITCHGEAR

Preliminary comments by the British Committee on Document 17A(Secretariat)10, Proposals for tests for circuit-breakers used for de-energizing lines on no-load.

The British Committee having considered Document 17A(Secretariat)10 in conjunction with the original proposal by the U.S. Committee given in document 17A(U.S.A.)5 make the following preliminary comments:-

II-1 Draft rules should cover for switching of cables on no-load and banks of capacitors.

For the time being it is suggested that the value should be 72.5 kV(i.e. applicable at 80 kV and above) but consideration will be needed to be given later to the extension of this in a downward direction to cover particularly cable and capacitor bank switching.

II-2 It is considered that provision must be made for carrying out tests using cables and capacitor banks. The British Committee considers that the arguments put forward in Section I-2 do not preclude tests being made other than on a network. So far as overhead lines are concerned, it appears to be necessary to define constants for each system voltage. It is also a question as to whether capacitance should be quoted in Farads per km or expressed as susceptance at 50 c/s in order to line up with the inductance which is expressed as reactance per km. An alternative would be to specify values of surge impedance.

If cables and capacitor banks are to be included it will be necessary to specify values for these.

It is considered that 50 milliseconds is considerably lower than would occur on overhead lines. For cables and capacitor banks the figure should be even higher.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TECHNICAL COMMITTEE No.17 : SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17A : HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comments of the Norwegian National Committee
on Document 17A(Secretariat)10: Proposal for Draft Rules
for Tests to be made on a circuit-breaker used
for de-energizing lines on no-load, Draft A

I. General considerations

The Norwegian Committee assumes that this Chapter is given only as an introduction to Draft A and will not be included in the final specification. For this reason no comment is made on this chapter.

II-1. Scope

The Norwegian Committee proposes that the Rules be generally applicable to all types of circuit-breakers having rated voltages higher than 52 kV for unearthed or tuned network. For effectively earthed networks the rated voltages shall be higher than 72.5 kV.

II-2. Electrical Characteristics of lines on no-load

The electrical characteristics given in Document 17A(Secretariat)10 do not include the characteristics of multi-conductor lines. It is proposed that this Clause be deleted.

II-3. Lengths of line on no-load to de-energize

It is proposed that the last line of the first section read:- "where U is the rated voltage of the circuit-breaker in kV and L are line length in km."

II-4. Test voltage

It is proposed that the first paragraph of this clause be altered to:- "The voltage on the line before de-energizing is dependent on the line capacitance and the impedance of the supply circuit. The test voltage shall be regulated so that the voltage on the supply side after de-energizing is as near as possible to the normal service voltage."

II-6. Earthing of the test circuit

It is proposed that "or earthed through an arc-suppression coil" be added to the last line of this clause.

II-7. Impedance of the supply circuit, and
II-8. Short-circuit power of the supply

It is proposed that Clause II-8 be deleted and that Clause II-7 be read as follows:-

"Two test series shall be made with each length of line on no-load, L 1 and L 2 defined in Clause II-3.

A first series shall be made with a supply of which the impedance shall be as low as possible and constituted by an assembly of overhead lines, or of cables, of which the capacitance shall be at least equal to the capacitance of the maximum length of line on no-load given by formula 1) in Clause 3, and connected directly to the latter. The short-circuit power of the supply shall not exceed the rated breaking capacity of the circuit-breaker.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No.17: APPAREILS D'INTERRUPTION

SOUS-COMITE 17-A: APPAREILLAGE A HAUTE TENSION

Remarques belges relatives au Document 17A(Secrétariat)11
Règles pour le choix des disjoncteurs

Article 4.

Pour être complet, il y aurait lieu d'attirer l'attention dans cet article, sur la nécessité de l'évacuation de l'eau de condensation des disjoncteurs pneumatiques et des disjoncteurs à expansion.

Pour le surplus, l'attention devrait être attirée sur la nécessité de ventilation et parfois de chauffage des commandes.

Enfin, certaines recommandations devraient être prévues pour les disjoncteurs du type intérieur, puisque les conditions de froid ou d'humidité dans les locaux généralement utilisés peuvent nécessiter des dispositions particulières.

Article 6.

Cet article est incomplet en ce sens qu'il ne tient pas compte des corrections à apporter aux caractéristiques des disjoncteurs à expansion sur lesquels l'altitude du lieu d'utilisation a grande influence.

Article 8.

Les deux phrases qui constituent le 6ème alinéa de cet article devraient être fusionnées, par exemple:

" Sauf spécification contraire, le pouvoir de coupure exprimé en MVA demeure cons-
" tant dans l'intervalle limité par les deux tensions nominales et, pour les ten-
" sions plus basses que la tension nominale la plus basse, le courant coupé demeure
" également constant, c'est à dire ..."

Article 9.

Le 4ème alinéa n'est valable qu'en l'absence de spécifications contraires.

Article 11.

Il y aurait lieu de signaler clairement que les cycles mentionnés sont les cycles normalisés. Si on ne le fait pas, la première phrase du 2ème alinéa laisse la porte ouverte à toutes les exigences, ce qui serait contraire à la normalisation.

Article 12.

A la fin de l'avant-dernier alinéa, il y a lieu de remplacer "mécanisme à servomoteurs" par "dispositifs de fermeture indépendants".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.17 HIGH-VOLTAGE SWITCHGEAR

AD-HOC COMMITTEE 17A - HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comment of the Netherlands Electrotechnical Committee on Document 17A(Secretariat)9, Proposal for Co-ordination of rated voltages, rated breaking-capacities and rated normal currents to be included in I.E.C. Publication 56, Chapter II, Part I, Rules for temperature-rise, Draft C

The Netherlands Electrotechnical Committee proposes that the following amendment be made to:-

Table 1 - Preferred ratings and co-ordination of ratings

For the voltage 10/12 kV and 250 MVA, Breaking Capacity, add the normal current 400 A.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.17 : SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17A : HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comments of the Netherlands Electrotecnical Committee on Document 17A(Secretariat)10, Proposal for draft rules for tests to be made on a circuit-breaker used for de-energizing lines on no-load, Draft A

The Netherlands Electrotecnical Committee proposes that the following amendments be made to:-

Page 1, I-1, second line : The words "or disturbed" to be replaced by "and is disturbing".

Page 5, II-6, last sentence : "Isolated" to be replaced by "connected to earth through a tuned arc-suppression coil."

Page 6, II-9, b) : Read the first sentence as follows:-

"b) Circuit-breakers designed to be operated in a network having its neutral connected to earth through a tuned arc-suppression coil."

In the following sentence replace the words "isolated neutral" by "neutral connected to earth through a tuned arc-suppression coil".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.17 : SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17A : HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comment of the Netherlands Electrotechnical Committee on Document 17A (Secretariat)11, Proposal by the Swedish Secretariat for Chapter IV of I.E.C. Publication 56, Second Edition : Rules for selection of circuit-breakers for service, Draft A

The Netherlands Electrotechnical Committee proposes that the following amendment be made to:-

Page 4, Clause 4 - Local atmospheric and climatic conditions.

To specify the lowest temperature.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.17 : SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17A : HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comments of the Netherlands Electrotechnical Committee on Document 17A(Secretariat)12, Proposal by the Swedish Secretariat for I.E.C. Publication No.56, Second edition, Chapter V, Rules for the maintenance of circuit-breakers on service, Draft A.

The Netherlands Electrotechnical Committee has been considering the desirability of formulating general rules for the maintenance of circuit-breakers for various voltages and used under various conditions.

The Netherlands Electrotechnical Committee proposes that the International Electrotechnical Commission restrict itself to referring to the rules of maintenance issued by the manufacturer and prescribing only the data to be laid down in the said rules of the manufacturer.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 17 : APPAREILS D'INTERRUPTION

SOUS-COMITE 17B : APPAREILLAGE A BASSE TENSION

Observations
du Comité français sur le document 17B(Secrétariat)4:
Projet de Règles de la C.E.I. pour l'appareillage
électrique à basse tension
Sectionneurs - Interrupteurs - Disjoncteurs

Le document 17B(Secrétariat)4 donne lieu aux observations suivantes :

4.3.5.1. - Le service continu

Il est suggéré d'adopter pour le service continu une définition analogue à celle du "service de 8 heures" des contacteurs.

4.3.5.2. - Le service ininterrompu

Nota : 68me ligne, lire : ".... que peut procurer l'ouverture des contacts".

4.3.5.3. - Le service intermittent périodique

Il y a lieu de compléter la définition en distinguant les deux cas suivants:

1°) Appareils coupant eux-mêmes le courant.

2°) Appareils dont le courant est coupé par un autre appareil.

4.3.6.1.3. - Absence d'indications sur le pouvoir de coupure d'un appareil

La rédaction devrait être modifiée car les indications a) b) c) ne valent pas pour les sectionneurs.

D'autre part, au dernier alinéa de a), 58me ligne, lire : ".....", au maximum 0,015 seconde", au lieu de 0,1 seconde.

4.3.7. - Classes d'usage

Tableau I - Le Comité français estime que les exigences relatives aux classes A et B devraient dépendre du courant nominal.

4.3.8. - Surintensités admissibles en cas de court-circuit

La durée de 1 seconde paraît être exagérée, il semble que dans l'état actuel de la technique, cette valeur pourrait être réduite.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.17 : SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17B : LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comments of the German National Committee
on Documents 17B(Secretariat)3, Part I, Contactors,
and 17B(Secretariat)4, Part II, Isolators, switches,
circuit-breakers

I. The German National Committee proposes that the following important questions be discussed in a special working group of Sub-Committee 17B, as these questions are the same not only for the present drafts, Part I and II, but also for all low-voltage switchgear and controlgear.

	Part I	Part II
1) Classification of insulating materials according to their leakage current (arc-tracking) stability	Table VII	Table IV
2) Creepage paths and clearance distances in air	Table VI	Table III
3) Correlation between the cross sections of the conductors and the rated currents	Table VIII	Table V
4) Correlation between different types of terminals and the rated currents	Tables IX, X, XI	Tables VI, VII, VIII
5) Degrees of protection	Items 3.3, 4.6, 8.2.8	Items 3.3.3, 4.6, 7.2, 8.2.5.3

The classification of insulating materials according to their leakage current (arc-tracking) stability, the creepage paths and clearance distances in air as well as the degrees of protection should furthermore be extended to other electrical equipment, such as motors, transformers and installation material, in order to reach a uniform insulation and protection level in any installation.

Notes.-

To Item 1 - We refer to Document 17B(Germany)3, Comments of the German National Committee on Document 17B(Secretariat)3, Table VII, and propose a classification of insulating materials and insulating parts into the three following groups:-

a) Ceramic materials, leakage current (arc-tracking) stable moulded and laminated plastics, mica materials, glass;

b) phenolic moulded materials with ribs, with organic as well as inorganic filler;

c) phenolic moulded and laminated plastics without ribs.

The German National Committee thinks it suitable to combine in Group a) the absolutely leakage current stable ceramic materials, the mica and glass products, as well as the more recent leakage current stable moulded and laminated plastics, which, with regard to leakage current stability, are far superior to phenolic moulded materials, e.g. melamine, polyester with glass fibre, polyvinylchloride (PVC), silicons, alkyds and other materials. In spite of their growing importance

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TECHNICAL COMMITTEE No.17: SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17B: LOW VOLTAGE SWITCHGEAR AND CONTROLGEAR

Corrigendum to Document 17B(Germany)3

Replace the Table VI given in Document 17B(Germany)3 by the following table

Table VI (proposal) - Part 1

Table III - Part 2

Rated voltage (Un) of the apparatus V		Creepage paths mm			Clearance distance in air mm
d.c.	a.c.	a	b	c	c
up to	up to				
[illegible]	[illegible]	[illegible]		[illegible]	4
250	2[illegible]	[illegible]	[illegible]	[illegible]	2
440	[illegible]	[illegible]	[illegible]	10	4
600	500	6	10	14	6
89[illegible]	7[illegible]	10	14	20	[illegible]
1 2[illegible]	1 [illegible]	14			10

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.38 : INSTRUMENT TRANSFORMERS

Comments of the Finnish National Committee
on Document 38(Secretariat)2: Revised I.E.C.
Publication No.44, Recommendations for
Instrument Transformers, (Part I)

The Finnish National Committee wish to make the following remarks on the Recommendations:-

Generally, we propose that the Recommendations should be brought to full agreement with the existing I.E.C. Recommendations Nos.38 and 71 as well as, concerning suitable parts, with No.76. Furthermore, the proposals made by Technical Committee No.42 in the Document 42(Secretariat)1, High-Voltage Testing Technique should also be taken into account.

Most of the following remarks relate to these questions.

101 - Definitions

a - n. No comments.

o. Rated voltage - We would point out the disagreement between this clause and Clause 202 in the I.E.C. Recommendation No.76.

We propose the following definition:-

"The r.m.s. value of the voltage marked on the rating plate and upon which the requirements of these Recommendations, except insulation tests, are based.

Note.- The insulation tests are based on the standard value of the highest voltage of the system, see Publication No.38, 'Standard System Voltages'."

201 - 206

No comments.

207 - Insulation levels and high-voltage tests

a. Routine tests

i) Tests on Primary Windings. We propose the wordings "The test voltage shall be alternating ..." and "The voltage shall be increased ..." should be replaced by a reference to the work of Technical Committee 42, or should be brought into better agreement with this.

ii) Tests on Secondary Windings. Principally as above.

b. Type tests - We propose the following:-

"i) Current transformers for use in exposed installations (see Publication No.71) shall be capable of withstanding impulse voltage test as prescribed below. The test shall be made with the transformers dry both for outdoor and indoor equipment.

The test voltage shall be determined ..."

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INTERNATIONAL ELECTROTECHNICAL COMMITTEE

TECHNICAL COMMITTEE No.17: SWITCHGEAR AND CONTROLGEAR

SUB-COMMITTEE 17B LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Comments of the Netherlands Electrotechnical Committee on Document 17B(Secretariat)3 Contactors

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The Netherlands Electrotechnical Committee proposes the following amendments.

1.1 Scope

a to read the second line as follows
"breaking electric circuits, and which may ensure, in com-
"bination with suitable"

b to replace in the first line of the paragraph above the Note the word "switchgear" by "contactors"

c to add in the third line of the Note "in addition" between the words "must" and "satisfy"

2 - Definitions

Contactor: to add in the second line between "to the open position" and "and intended" the words "of the main contacts"

Pneumatic contactor

to read the end the second line and the third line as follows:
" ..... is fed to a device which acts on the mechanism of the contactor"

Stationary contact

to read: "Stationary auxiliary contact"

Working contact

to read: "Working auxiliary contact"

4.3.5.1 In the last paragraph to delete the word "operational"

4.3.5.4 To replace the second paragraph of the Note by:
For other numbers of operations per hour the total duration of the cycle in seconds and the duration of current flow in seconds are appointed in a similar way.

4.3.6.1.1 third line to add "undue" between "without" and "wear"

Table I To read the values "For normal operation"

	I	Ur	cos φ
A_2 - Break	2.5 Ie	0.1 U_n	0.7
A_3 - Break	Ie	0.1 U_n	0.7

- Tabel II -

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.38 : INSTRUMENT TRANSFORMERS

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Comments and proposals of the Netherlands Committee on Document 38(Secretariat)2: Secretariat proposals for the revision of I.E.C. Publication 44

General

The Netherlands Committee is of the opinion that a scope dealing with:-

a) field of application (types of transformers)
b) operating conditions (ambient temperature, altitude, etc.)

should precede the specification.

We are in favour of a system of numbering the clauses as adopted in Document 38(Secretariat)1, which we consider clearer than that adopted in Document 38(Secretariat)2.

101 c) - Read "current circuit" instead of "current coil".

101 d) - Rated primary current.
It is proposed that the definition be changed to:-

"The r.m.s. value of primary current assigned by the manufacturer as being the reference current for this specification."

101 e) - Rated secondary current
It is proposed that the definition be changed to:-

"The r.m.s. value of secondary current assigned by the manufacturer as being the reference current for this specification."

101 g) - Add in the last sentence after "... flowing" the words "In the primary winding".

101 h) - Read the first sentence: "The phase difference between the primary current ... etc."

In the note read: "The phase error is normally ... etc."

101 j) - Burden.
This clause should appear before Clause 101 i), Rated Output.

101 i) - Rated Output
Amend to read: "The value of the burden assigned by the manufacturer for being the reference burden for this specification".

101 k) - The Netherlands Committee maintains its comments of Document 38(Netherlands)1 and proposes the introduction of:-

"Rated thermal current limit. The r.m.s. primary current assigned by the manufacturer which can be admitted for the rated short time and at a specified secondary burden with regard to thermal effects.

Rated dynamical current limit. The primary initial current peak assigned by the manufacturer, which can be admitted at a specified secondary burden, without occurrence of damage due to mechanical effects."

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TECHNICAL COMMITTEE No.40 : CONDENSERS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-1 : CONDENSERS AND RESISTORS

Comments of the German Committee on Document
40-1(Secretariat)7, Draft Specification for Radio Interference
Suppression Capacitors for a.c.

1.1 - We recommend that it be stated in a note if radio interference suppression capacitors of any dielectric material are covered or not by this specification. Furthermore it shall be stated if combinations of capacitors and resistors are within the scope or not. There are many cases in which the capacitor has different functions, e.g. spark-extinguishing besides radio interference suppression, and it is normally hard to say which is the main application.

1.3.1 - For clarity insert in the second line after a.c. the word "main".

1.3.2.1 - We propose the insertion of the following definitions for feed-through, by-pass, or through-pass-capacitors, which are very important types of radio interference capacitors:-

"1.3.2.1 - Feed-through capacitors are radio interference suppression capacitors which have a central lead for the operating current, around which the capacitor unit is arranged concentrically.

Note 1.- In general one of the electrodes is connected concentrically and H.F. tight with the central lead; the other electrode is connected in the same manner with the case or with a conducting part of the case of the capacitor. The case or its conducting part has to be so constructed, that it can be connected H.F. tight with the shielding enclosure.

Note 2.- A feed-through capacitor is connected H.F. tight, if the coupling impedance of the assembly is not noticeably higher than that of the capacitor. It can be realized by a non-interrupted linear or surface contact.

Figure 1 - Mounted feed-through capacitor (wound paper capacitor)

a) Feed-through bolt (for leading the operating current)
b) Metal case of the capacitor
c) Insulating cover
d) Foil connected with feed-through bolt
e) Foil connected with case
f) Screen of the apparatus
g) H.F. tight connection.

1.3.2.2 - By-pass or through-pass capacitors have two leads atleast for one of the electrodes. The electro-magnetic coupling of the leads is as low as possible. The operating current passes these leads. The capacitors are by-pass capacitors, if the leads pass along the capacitor unit.

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TECHNICAL COMMITTEE No.40 : CONDENSERS FOR ELECTRONIC EQUIPMENT
SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Netherlands National Committee on
Document 40-1(Central Office)6: Specification for
fixed carbon resistors type II

The Netherlands Committee is in favour of the publication of the above mentioned document as an IEC Publication but wishes to make the following comments:-

1.1 - Scope

Third line, add "equipment" after "telecommunication". Note 1 to be replaced by the following:-

> "Resistors covered by this specification are usable up to a maximum temperature of the resistor of 100°C with appropriate derating. (A specification for a type intended for use at higher temperatures is under consideration)."

1.3.6 - Ambient temperature

In the 4th line substitute "under the most unfavourable conditions" for "in its most unfavourable conditions". The second paragraph should be amended to read: "when the resistor is dissipating power the temperature in the immediate vicinity of the resistor will rise".

1.3.7 - Rated temperature range

It is proposed that the words "Taking into account Clause 1.3.4" should be added at the end of the definition.

1.5 - Rated values of resistance

It is proposed that this title should be replaced by: "Values of rated resistance" in conformity with Clause 1.3.3.

1.7 - Dissipation and voltage ratings

It is proposed that the units should be amended as follows: "For ambient temperatures above 40°C the dissipation has to be reduced as given in Clause 1.3.4".

1.9.1 - Marking

Substitute "rated resistance" for "resistance value". The indication of the resistor type (I or II) should be added.

1.9.2

The present wording of item d, when read in connection with definitions 1.3.4 and 1.3.5 requires that for every resistor the rated dissipation shall be given taking into account the rated voltage and vice versa. For example a resistor of 1 W 500 V (as it is indicated according to present practice) should be marked as 1 W 500 V for a resistance value of 250 000 ohm only. Below that resistance value the marked rated dissipation should be 1 W, but the marked rated voltage should be less than 500 V. It is therefore proposed that item d be replaced by the following: "Maximum values of rated dissipation and rated voltage for the type of resistor."

1.10.2 - Type acceptance test

In the last paragraph substitute "customer and manufacturer" for "purchaser and vendor".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT
SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the Netherlands National Committee on Document 40-1(Central Office)9: Specification for receiver-type metallized mica capacitors.

The Netherlands National Committee is in favour of publication of the above mentioned document as an IEC recommendation, but wishes to make the following comments:-

1.6.2 - Classification

The Netherlands Committee would like to point out that no climatic group with a minimum temperature of -10°C has been provided for in the specification. In many countries wax dipped mica capacitors are used to a large extent in radio receivers. According to our experience such capacitors do not withstand temperatures below -10°C.

If it is considered of importance to cover these capacitors also in the specification, a group 7/55 might be added.

1.8 - Tolerances

It seems an undue complication to have two different systems with regard to minimum tolerance limits for mica capacitors and ceramic capacitors. The system adopted for ceramic capacitors has some slight advantages and could also be accepted for mica capacitors (percent tolerances above 10 pF and pF tol rances below 10 pF).

1.12 - Production tests

It is proposed that this clause be deleted. Production tests are the responsibility of the manufacturer and therefore these tests should not be mentioned in this specification, for the following reasons:- The object of this specification as laid down in Clause 1.2 is to obtain generally accepted terms and measuring methods so that all quotations have a common basis and to standardize certain performance levels (eventually with dimensions) so that components from different sources are more easily comparable and the unnecessary diversity will be reduced. It was been advocated during the meetings of Sub-Committee 40-1 that this object implies that the user has a knowledge about the tests carried out by the manufacturer during production. But when devising production tests many factors have to be taken into account by the manufacturer such as design, manufacturing process and application by the user. Consequently it is impossible to require in an international specification of the above character that certain tests shall be carried out on all manufactured components of a certain type.

2.4.1.1 - Voltage proof

The reference to production tests should be deleted (see remarks to Clause 1.1).

2.4.2.2 - Capacitance value

In the second sentence "absolute" should be added before "error".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40: COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-1: CAPACITORS AND RESISTORS

Preliminary comments of the Norwegian National Committee on
Document 40-1(Central Office)8
Specification for fixed Carbon Resistors of Type II

Clause 1.3.6. Ambient temperature

Attention is drawn to the work of Sub-Committee 40-5 in this matter.

Add after "apparatus" in the 3rd line: "Otherwise" - as the apparatus is not operating normally when the resistor in question in unloaded.

Clause 1.4 As publication I.E.C. No.68 is at present under revision some reservation seems necessary in our opinion. We suggest that due regard be taken to this circumstance.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-1 : CAPACITORS AND RESISTORS

Comments of the U.S. National Committee
on Document 40-1(Central Office)8 : Specification for
fixed carbon resistors type II

Clause	Recommendation	Discussion
1.3.3	Nominal resistance Change wording as follows:- "The nominal resistance of a fixed, carbon resistor is the value which is marked or coded on it ...".	We feel the wording as indicated is a more applicable definition of resistance value.
1.3.4	Rated dissipation Add a second derating curve from 70°C full load derated to "0" load at 130°C.	This paragraph is essentially unchanged from the definition of rated dissipation as outlined in the previous draft; however, paragraph 2.6 specifies that the endurance test shall be run at 70°C 1/2 load. If a 70°C test is required, we propose that two wattage ratings be included as previously recommended and as are included in the U.S. Military Specification MIL-R-11A, one at 70°C and one at 40°C, both to be tested at the full wattage rating. (See comments under paragraph 2.6).
1.4	Classification of groups It is recommended that the examples shown in the tables be limited to groups 4A and 4B. Omit group designations 5, 6 and 7 from first and second figure. Omit 6 and 7 from third figure.	This specification, as indicated in paragraph 1.3.1 and paragraph 1.4.2 is limited to fixed, carbon composition resistors. Therefore, the table and examples should include only those group designations covered by fixed composition resistors.
1.4	Classification [illegible]	[illegible]
[illegible]	[illegible]	[illegible]

40-2(France)6

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No.40: PIECES DETACHEES POUR L'ELECTRONIQUE

SOUS-COMITE 40-2: CABLES ET CONNECTEURS
POUR FREQUENCES RADIOELECTRIQUES

Observations du Comité français sur le
document 40-2(Secrétariat)8
"Proposal for list of cables with a dielectric
of solid polyethylene for which relevant
cables sheets have to be prepared in the near future"

Le Comité français est favorable à l'ensemble du projet proposé par le document 40-2(Secrétariat)8, toutefois la tolérance de ± 1 ohm sur l'impédance du câble de diamètre 2,7 mm, sous double écran, lui paraît trop sévère, compte tenu des tolérances admises pour les fils constituant le conducteur central et des tolérances de fabrication pour le diamètre sur diélectrique.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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COMITE D'ETUDES N° 40 : PIECES DETACHEES
POUR EQUIPEMENTS ELECTRONIQUES

SOUS-COMITE 40-2 : CABLES ET CONNECTEURS
POUR FREQUENCES RADIOELECTRIQUES

Observations du Comité français sur le
document 40-2(Bureau Central)2: Prescriptions et
méthodes de mesures générales pour
câbles à fréquences radioélectriques

Le Comité français propose les modifications suivantes au document 40-2(Bureau Central)2 (texte français).

Observation générale

La valeur de température de 100° ± 2°C adoptée pour plusieurs essais (fluage, vieillissement à la chaleur, etc...) ne peut être acceptée sans réserve pour des câbles au polyéthylène.

Observations d'ordre rédactionnel

1.5.4 - alinéa d -
1ère ligne - lire : ou d'un film métallisé
au lieu de : ou d'un fil.
2ème ligne - lire : ... avec une tresse de cuivre (comme en a) appliquée autour de ce film ou de cette couche métallique.

- dernier alinéa -
2ème ligne : déplacer la virgule et la mettre après fils et non après tubes de manière à lire :
... les échantillons de fils, de tubes ou de rubans de cuivre, ...

2.1 Il vaudrait mieux maintenir le texte primitif "Résistivité du ou des conducteurs intérieure" aussi bien dans le titre qu'à la 2ème ligne, puisqu'il peut s'agir de câbles en paires symétriques.

2.5.2 - 3ème ligne - lire : ... la tension d'essai doit être diminuée progressivement ...

2.8.2 - Le signe de multiplication du dénominateur de la formule donnant % est mal formé et peut prêter à confusion (prendre exemple sur le texte anglais).

4.4 - Titre - lire : Flexion au froid après vieillissement

au lieu de : stabilité au vieillissement

en accord d'ailleurs, avec le texte anglais en regard.

5.3 - alinéa d - Les textes anglais et français ne se correspondent pas

Le texte français devrait comporter

d) un numéro de série,

la fin de la phrase du texte français actuel étant supprimée.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No. 40 : PIECES DETACHEES POUR L'ELECTRONIQUE

SOUS-COMITE 40-2 : CABLES ET CONDUCTEURS
POUR FREQUENCES RADIOELECTRIQUES

Observations du Comité français sur le
document 40-2(Secrétariat)9
Second proposal - Specification for Radiofrequency cable
Type : Flexible coaxial cable
Rated impedance 50 ohms
Diameter over dielectric 7,25 mm

Le Comité français propose les observations suivantes au document 40-2(Secrétariat)9.

2. Construction

a) Conducteur intérieur

Etant donné les tolérances étroites exigées pour l'impédance caractéristique, la spécification du conducteur intérieur devrait être complétée en accord avec les dimensions et les tolérances normalisées des fils unitaires dans les différents pays.

La proposition de l'unité britannique (document 40-2(United Kingdom)6) qui suggère comme valeur idéale 0,75 mm devrait être prise en considération.

b) Conducteur extérieur

L'angle de tresse doit être indiqué comme inférieur ou égal à 40°.

c) Protection extérieure

Ajouter pour la couleur, sauf spécification contraire.

3. Essais électriques

a) Résistance d'isolement

La valeur minimale de la [illegible] paraît un peu faible. Avec un diélectrique en polythène, cette valeur devrait être portée au moins à [illegible] mégohms.

b) Rigidité diélectrique de la gaine

Compte tenu de l'épaisseur de l'ensemble des tresses, les tensions d'essais indiquées paraissent trop élevées.

Le Comité français suggère les valeurs suivantes:

[illegible] - [illegible]
[illegible] - [illegible]

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No.40: PIECES DETACHEES DE L'ELECTRONIQUE

SOUS-COMITE 40-2: CABLES ET CONNECTEURS
POUR FREQUENCES RADIOELECTRIQUES

Observations du Comité français sur le
document 40-2(Secrétariat)11
Survey of proposals concerning RF connectors

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1. Le Comité français propose de normaliser les connecteurs pour câbles pour fréquences radioélectriques indiqués dans le tableau ci-après:

Diamètre des câbles	Z = 50 ohms	Emploi général
Câble du type 17 mm	Type LC	
Câble du type 7 mm	Type [illegible]	Type N4 à 40
Câble du type 3 mm	Type BNC	Type BNC

2. Il n'est pas proposé de connecteurs pour les câbles d'impédance 75 ohms.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 : CONDENSERS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2: R.F. CABLES AND R.F. CONNECTORS

Comments of the Netherlands Committee on Document
40-2(Central Office)2: General requirements
and measuring methods for RF cables

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1. The Netherlands Committee cannot agree with Clause 4.7 "Contamination of plasticizer" in its present wording. We already objected to it during the meeting in London and it was promised that Mr. Mans would supply further information concerning the influence of oxydation of the outer conductor (Minutes R.M.400, page 19). A number of further measurements have been carried out and the results are given in the appendix to this document.

The conclusions drawn from these measurements are such that we cannot agree with the requirement for the increase of attenuation after the test as specified now.

The main reason is that the increase of attenuation will widely differ with the type of cable and it shall be considerably greater for cables with smaller diameters than for cables with larger diameters. It is proposed that the requirement be referred to the relevant cable specification. When specifying these requirements the influence of the oxydation of the outer conductor will have to be taken into account. If the outer conductor is not renewed before the re-measurement of the attenuation, the requirement for the increase of the attenuation shall be such that the influence of the oxydation is covered. Finally we remark that we would prefer a test of 7 days at 100°C, but we do not strongly oppose the present test of 14 days at 85°C.

We propose the following amendment of the present wording, which would make this clause acceptable to the Netherlands Committee:-

> "Clause 4.7.3 After cooling the attenuation shall be measured at 3 000 MHz and the increase of attenuation shall not exceed the value specified in the relevant cable specification."

2. Furthermore we would appreciate if the following suggestions for amendment of the present wording could be taken into consideration.

Clause 1.3.1

We propose that the following new definitions be added after 1.3.1.3:-

Outer conductor
The outer conductor of a coaxial cable is the conductor which is applied concentrically around the inner conductor and separated from it by a dielectric.

Screen
The screen of a coaxial cable consists of one or more conductive layers, applied concentrically around the outer conductor for the purpose of reducing the influence of electromagnetic fields.
These layers may be separated from the outer conductor by insulating material (insulated screen).

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40-2 (United Kingdom)14

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TECHNICAL COMMITTEE NO.40 : COMPONENTS FOR ELECTRONIC EQUIPMENT.
SUB-COMMITTEE 40-2 - RADIO FREQUENCY CABLES AND RADIO FREQUENCY CONNECTORS.

Revised British Proposal for a Coaxial Cable Connector for Television Receivers.
(Supersedes Document 12-5 (United Kingdom)8)

In Document 12-5 (United Kingdom)8 of August 1954, the British Committee submitted a proposal for a coaxial plug and socket for television receivers.

The British Committee now submits the following revised proposal which is based on a draft British Standard. This proposal supersedes that in Document 12-5 (United Kingdom)8.

1. Introduction. This proposal specifies the essential dimensional features of a coaxial connector for use with coaxial cables having an overall diameter of up to 0.294 in., and having a characteristic impedance of between 50 and 100 ohms. Contact resistance requirements are given but contact finishes are not specified.

2. Terminology. In this proposal the following terminology is used:-

a. Plug member. That part of the connector which is attached to the feeder.

b. Socket member. That part of the connector which is attached to the apparatus.

3. Dimensions. a. The dimensions and tolerances of the plug and socket members shall be as shown in Figure 1.

b When a flange is provided on the socket member as a means of attachment to apparatus, the flange shall have two fixing holes 0.131 inch ± 0.005 in. diameter, which shall be spaced 0.750 inch plus or minus 0.005 inch apart, and shall each be on a diameter drawn through the centre of the socket.

4. Plug member. a. The plug member shall be designed for attachment to a coaxial cable having a maximum overall diameter of 0.294 in.

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/see over

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40 - CONNECTORS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-4 - CONNECTORS FOR PRINTERS

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General Recommendation for
printed wiring - first draft

Introduction

During the meeting of T.C.40-4 in London in 1955, the U.S. delegation proposed that connectors for printed wiring should be standardized. A proposal for these connectors was made in document 40-4(U.S.A.)1.

The Secretariat was of the opinion that it would be useful to consider, in connection with the U.S. proposal, the standardization of the fundamental dimensional parameters of printed wiring in general. If agreement on this subject could be reached internationally and it could result in an international recommendation, it might be of great assistance for the further development of printed wiring technique and its applications.

Although this item was not included in the programme of future work drawn up during the London meeting, the Secretariat proposes that this item be given further consideration in Münich and if the Sub-Committee would agree to this proposal, advice could be given to the plenary session of T.C.40 to the effect that work in this field should be continued, it being left to T.C.40 to select the appropriate Sub-Committee.

The following draft is mainly intended to serve as a basis for discussion and it would be appreciated if comments on it were received during the meeting in Münich.

1.1 - Scope. This recommendation relates to fundamental dimensional parameters of printed wiring technique to be used in telecommunication equipment and electronic devices using similar techniques.

1.2 - Definition of terms

1.2.1 - Printed wiring. Technique in which the connections between the components of an electronic device or part of it consist of thin conducting strips at the surface of a board of insulating material and in which all the functional components (I, [illegible]) are separate from that board.

1.2.2 - Printed circuit. Technique in which one or more components of an electronic device consist of thin conduction strips at the surface of a board of insulating material and in which the connection between these components and the further components of that same electronic device or part of it consist of thin conducting strips at the surface of the same board.

Note.- This definition is included for information only. Printed circuits are not covered by this recommendation.

1.3 - Basic grid

1.3.1 - Where the centres of the holes for fixing and connecting the components to the printed wiring board are located according to a rectangular grid, the basic grid with nominal spacings in the two directions of 2.[illegible] (0.[illegible] inch) shall be used.

40-4(Netherlands)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 40 : FOR CLOSED CONNECTORS AND SWITCHES

SUB-COMMITTEE 40-4 : CONNECTORS AND SWITCHES

Members of the Netherlands Electrotechnical Committee
on Document 40-4(Netherlands)1, General requirements
for the proportion of contacts of connectors and switches

Clause 1.3.1

We doubt whether it will be desirable to introduce a fourth digit for the indication of the gauge. We agree that it will be useful to introduce some standard values for the maximum allowable contact resistance, but we would favour other limits:-

0.5, 10 and 50 milliohm.

We do not understand why the property which is called "noise voltage" should be coupled with the requirement for contact resistance as in a number of cases the contact resistance will not be very important, but the noise produced by the contact should be very low. We should prefer to specify the value for noise voltage separately for each type on the relevant connector sheet. Finally we remark that the figures for noise voltage seem to be rather high and we should appreciate to have whether they are based on actual measurements.

Clause 2.2.3

We suggest a reasonable time clause after all other clauses have been considered. With regard to the noise remarks at the end of this clause, we are of the opinion that the [illegible] of contact pressure will have to be included in the document and if no definite wording for this requirement can be found, it should be left "under consideration" for the time being.

Furthermore we [illegible] to be important to specify the procedure of measuring insertion [illegible] forces and the method of defining the gauges for these tests.

Clause 2.4.1

The second [illegible] to be insufficiently clear and we should prefer to specify that the resistance shall be measured between the soldering tags of the [illegible].

Clause 2.4.2.1

We should [illegible] more information could be given about the results of the measurements on which the value of 2 mV is based.

The [illegible] seems to be too low and we should prefer ±10%.

Furthermore we [illegible] that the contact under test shall be closed before the measuring voltage is switched on, as otherwise the full measuring voltage will [illegible] contact on the moment just before closing.

Finally we [illegible] specified that at least 5 measurements on each contact shall be carried out.

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12-6(United Kingdom)3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO 12: RADIO COMMUNICATION

SUB-COMMITTEE 12-6 : RADIO TRANSMITTERS

Observations of the British Committee on Document 12-6(Secretariat)4, Secretariat's Proposal for Modification to be suggested for the revision of the first edition (1938) of the International IEC Vocabulary, Group 60, Radio Communications, Section 25, Transmitters.

The British Committee has considered Document 12-6 (Secretariat)4, Secretariat's proposal for modification to be suggested for the revision of the first edition (1938) of the IEC Vocabulary Group 60, Radio Communications, Section 25 Transmitters, and submits the following comments:-

2.1 Modulation. It is agreed that a definition for modulation is necessary and the following is suggested:-

"The process, or the result of the process by which one or more of the characteristics of an oscillation such as amplitude, phase or frequency are caused to vary as functions of the instantaneous value of an applied stimulus which may or may not be a periodic function."

The following amendments to definitions in the Secretariat's proposal are also recommended:-

2.4 Frequency shift keying. Keying of a radio transmitter whereby the frequency is shifted by a prescribed (small) amount.

2.5 Frequency deviation. Of a frequency-modulated or phase-modulated oscillation. The maximum frequency excursion above or below the mean transmitter frequency during any one cycle of the modulating oscillation.

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16(United Kingdom)203

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.16 : TERMINAL MARKINGS AND OTHER IDENTIFICATIONS

Comments of the British National Committee
on Document 16(Editing Committee)2, Terminal Markings
for Rotating Electrical Machines

The British National Committee has given the document their careful consideration and find that there is no possibility of the proposals being adopted in this country in the foreseeable future. They would like to make it clear that, in arriving at this decision, they have reviewed the draft most carefully to see whether by making changes to the system adopted in this country it would be possible to adopt the greater part of the proposed markings and they have come to the conclusion that it is not merely a question of conceding some points in order to achieve international agreement, it would be a question of adopting an entirely fresh system.

It is also felt that, if markings are to be formulated which will eventually be widely used by the National Committees, the proposed markings should be endorsed by T.C.2, Rotating Electrical Machinery, and drawn to the attention of S.C.17B who are responsible for Low-voltage Control Gear.

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22-2(Italy)2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.22 : POWER CONVERTING EQUIPMENT

SUB-COMMITTEE 22-2 : SEMI-CONDUCTOR RECTIFIERS

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Comments of the Italian Electrotechnical Committee on
Document 22-2(Secretariat)3, Second Draft I.E.C. Recommendations
for semi-conductor stacks, rectifiers and rectifier equipment

---

General Observation

It is suggested that all the definitions be given in a first part and recommendations be included in following parts.

110-1

The frequency field should be limited to 400 Hz.

131

Too many definitions are given; furthermore some of them are not very clear. We suggest the definitions of the attached diagram. In any case the meaning of various terms could be better explained by a diagram.

In our opinion the use of the word "element" should be avoided, as in some countries it is used to mean "cell", in other countries "stack".

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It is suggested that the use of cooling fins and cooling by solid contact be brought to notice. In classifying the cooling systems primary and secondary fluids should be separately considered; primary fluid (air, oil, etc.) which is in contact with the rectifier cells, secondary fluid (air, water, oil, etc.) which dissipates the heat absorbed by primary fluid.

Obviously special cooling systems not considered in the above classifications are not excluded.

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When particular arrangements are made between the purchaser and the manufacturer on the matter of temperatures, reference can be made to maximum daily and yearly average ambient temperature.

Instead of Clauses 141-3, 4 and 5, we suggest the following clause:-

"When not otherwise specified, the ambient temperature does not exceed 35°C. If particular ambient conditions occur the purchaser shall indicate them to the manufacturer."

142

Add "or fixed".

211-1

We suggest that another clause be considered in which different shapes of cells are illustrated; among these the plate is a particular case.

Clause 211-1 could be deleted.

211-2/3

These clauses should be included among the definitions at the beginning of the document.

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INTERNATIONAL ELECTROTECHNICAL COMMITTEE

COMMITTEE OF ACTION

STANDARD AMBIENT TEMPERATURES FOR TESTING CONDITIONING OF MATERIALS AND SAMPLES FOR TEST

Historical Survey

At the meeting of the Committee of Action at Philadelphia in 1954 a note on "ambient temperatures during tests" was presented by the Netherlands (01(Netherlands)2). Professor Dr. Bähler was invited to draw up a specific proposal for submission to the Committee of Action.
This proposal reads as follows (see R.M.329/C.A., October 1954, page 12) :

"In international, national and other recommendations, temperatures are specified for different purposes, including the following:

1. Reference ambient temperature as a basis for fixing of temperature.
2. The maximum temperature at which equipment should operate in service.
3. The temperature at which tests are carried out or at which specimens are conditioned for test.

In case 1 and 2 the temperature must be chosen according to the conditions under which the equipment is intended to be used, and should be prescribed by the relevant Technical Committee when drawing up the IEC recommendations for rating, etc.

In case 3, however, it is desirable to standardize the test temperature in order that all laboratories may use standardized equipment and conditioning procedures.

For some purposes special considerations apply, but for the majority of purposes a temperature of the order of 20°C to 30°C is suitable and a single temperature could be adopted.

A temperature of 25° ± 5°C is recommended for adoption in all cases where special considerations do not arise.

All Technical Committees are asked to adopt this test temperature if possible, but if this temperature is not suitable or if the tolerance is unduly wide, this should be reported together with the reasons to the Committee of Action when a draft recommendation is circulated under the Six Months Rule.

After discussion, it was decided that the above proposal should be circulated to the National Committees for comment. At the same time, the matter will be referred to Sub-Committee 12-3(Components) - in future Technical Committee N° 40 - who will be asked to study the comments from the National Committees and to consider the overall aspect of the question as well as the liaison to be established in this connection with the other IEC Technical Committees, the CEE and ISO. Sub-Committee 12-3 will prepare a summary of the comments from the National Committees and recommendations for submission to the Committee of Action, at its next meeting".

As appears from the Minutes of the meeting of Technical Committee N° 15 : Insulating Materials in Philadelphia (see R.M.345/T.C.15 of December 1954, page 7), there was some discussion on the question of the conditioning of insulating materials on that occasion. A resolution was submitted to the Committee of Action which reads as follows:

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25(India)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.25 : LETTER SYMBOLS AND SIGNS

Comments of the Indian National Committee on Document 25(Secretariat)2, Proposals of the Secretariat with a view to the revision of the Third Edition of I.E.C. Publication No.27

---

1. In place of "ampere" for the unit of magnetomotive force, read "ampere-turn".

2. In place of "amperes per metre" for the unit of magnetic field strength, read "ampere-turn per metre".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.39: ELECTRONIC TUBES AND VALVES

Observations of the German National Committee
on the U.S. proposal "Proposed Methods of
Testing Transistors" (see Document 39(Secretariat)22, item 5)

The German National Committee is in favour of the international standardization of transistors.

The German National Committee, however, is of the opinion that first of all definitions, general directives for the use of transistors and prescriptions for the dimensions of sockets and holders of transistors should be drawn up.

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INTERNATIONAL ELECTRO-TECHNICAL COMMISSION

TECHNICAL SUBCOMMITTEE No. 36-4

RECOMMENDED STANDARD AND CURRENT NATIONAL STANDARDS

for

BALL AND SOCKET COUPLINGS

of

STRING INSULATOR UNITS

DRAFT

prepared by the Secretariat and
to be discussed by the SC 36-4
at the Vienna Meeting, 9th - 11th July, 1956

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CISPR(Secretariat)317 July,1956.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE
(C.I.S.P.R.)

Revised draft Agenda for the CISPR meeting
to be held from the
24th to 27th July, 1956, inclusive, at the
Régie des Télégraphes et des Telèphones, 42 rue des Palais, Brussels.

Opening Plenary Session, 10 a.m. Tuesday 24th July.

1. To confirm the Agenda.
2. To receive the report R.I.12 of the CISPR Plenary Session held in London on the 12th to 15th October, 1953, inclusive.
3. To note CISPR(Secretariat)316, Action arising from the 1953 meeting of the CISPR.
4. To receive the reports of the meetings of the CISPR Steering Committee, held since the 1953 Plenary meeting of CISPR, as follows:-

   R.I.(Secretariat)208, Report of the meeting held on 20th October, 1954.

   CISPR(Steering)302, Report of the meeting held on 12th and 13th July, 1955.

5. To receive and, if considered appropriate, to confirm the recommendations of the Steering Committee concerning the proposed terms of reference of the CISPR.

   See documents:

   CISPR(Secretariat)310, Proposed terms of reference of the CISPR. (superseding Document CISPR(Secretariat)302)

   CISPR(Switzerland)302, Comments of the Swiss Electrotechnical Committee on CISPR(Secretariat)302.

6. To consider CISPR(Secretariat)321, CISPR recommendations and questions.
7. To note the arrangements for liaison between the CCIR and the CISPR, and to note the CCIR Recommendations and Questions which require collaboration between the CCIR and CISPR.

   See document:-
   CISPR(Secretariat)312, Liaison between CCIR and CISPR.

8. To note that CIGRE have set up a co-ordinating committee for the purposes of collaboration with CISPR.

   See document:-
   CISPR(Secretariat)323, Liaison between CIGRE and CISPR.

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40-5(Netherlands)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.40: COMPONENTS FOR ELECTRONIC EQUIPMENT
SUB-COMMITTEE 40-5 : BASIC TESTING PROCEDURE

Remarks of the Netherlands Committee with regard to
Document 40-5(Secretariat)3: Draft Revision
of IEC Publication No. 68

1. Scope

In the third line, "telecommunication" should be substituted for "radio-communication" in conformity with the scopes of the component specifications.

2. Object

During the Paris meeting, it was agreed in principle to include the statement that in case of conflict between this specification and a component specification the latter would apply.

On the other hand, the opinion was expressed that deviations from the basic testing procedures should be limited to the utmost.

The Netherlands Committee would like to point out that it is impossible to judge beforehand on what points deviations may be necessary for the future drafting of component specifications. Therefore it is not favoured to use the expression "unless otherwise specified in the relevant specification" in a number of clauses which are chosen rather arbitrarily.

For that reason it is proposed that all references to the component specifications as mentioned above be deleted and that the last paragraph of section 2 be worded as follows:-

> "This publication shall be used in conjunction with the relevant component specification which will define the tests to be used, the required degrees of severity for each of them and the permissible performance limits. The relevant specification will also specify the deviations in testing procedure which are inevitable when applying the test to the type of component under consideration, and it will further specify any special procedures which may be required."

For an example of the text in case of deletion of references to the component specification, see our remark on Clause 4.1.

3.1 Outline of tests

First line above table: delete "single". First line of table, delete "single tests".

For D. Damp heat (accelerated), severity VII should be included as follows:-

55°C
RH 95 % to 100 %
1 cycle of 24 hours + 6 hours assisted recovery.

The severities indicated for K, Salt mist, are not in accordance with Clause 4.10.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.38 : INSTRUMENT TRANSFORMERS

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Comments of the German National Committee
on Document 38(Secretariat)2 : Recommendations for
Instrument Transformers, (Part I)

Preamble

The difference between measuring transformers (Part I) and capacitor voltage transformers (Part III) is a contradiction, the capacitor voltage transformers being measuring transformers, too. If a classification into three parts must be effected, the heading ought to be at least:-

Part I : Measuring Transformers excepting Capacitor Voltage Transformers

Part II : Protective Transformers excepting Capacitor Voltage Transformers

Only after submitting the draft of Part II can it be decided whether a separate treatment of the measuring and the protective transformers is necessary and advisable.

Section 1

101.j.u.
111.k.

According to the definitions in the International Electrotechnical Vocabulary, Document 1(Secretariat)229, March, 1953, the rated output is laid down in Term 20-45-105 and the rated burden in Term 20-45-110 for transformers. It is impossible to use the word "burden" for two different physical magnitudes, namely first for the output and then for the inductive resistance. According to the German usage, the word "burden" means the impedance and not the output. It is proposed that the definitions in the International Electrotechnical Vocabulary be used. It seems to be necessary to define also the power factor of the burden.

101.l.u.
101.m

The existing definitions for the short-time current factor and for the rated short-time are unnecessary, the thermic limit current being already defined in 101.k and uniformly referring the same to a short-time of 1 s, seems to be sufficient.

201.

The rated primary currents of 1.25 and 2.5 A are unnecessary. Only the rated primary currents of 5 A and 1 A are required below 10 A.

202.

The rated primary currents of 2 A and 0.5 A are not required.

203.

The rated output of 7.5 A is unnecessary. It is proposed that the power factor of the burden be fixed, as well as that of voltage transformers, to cos = 0.8.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES ... TRANSFORMATEURS DE MESURE

Remarques belges relatives au document
36(secrétariat)2 - Projet de révision de la
Publication 44 de la C.E.I. - Recommandations
pour les transformateurs de mesure (première partie)

Remarques générales

1 Le Comité belge ne voit pas la nécessité de scinder les recommandations concernant les transformateurs de mesure proprement dits de celles relatives aux transformateurs de protection, d'autant plus que certains transformateurs comportent à la fois des enroulements de mesure et des enroulements utilisés à des fins de protection.

2. Dans les recommandations relatives aux niveaux d'isolement des transformateurs de mesure, le point de vue adopté est celui de l'utilisateur, et non celui du constructeur. Il est fait appel à plusieurs reprises à la notion de "tension la plus élevée en service normal" du réseau auquel est destiné le transformateur, empruntée à la publication 71 relative à la coordination de l'isolement.

La coordination de l'isolement est un problème qui concerne l'utilisateur, alors que le constructeur de transformateurs de mesure ne doit se préoccuper que de leur tension nominale d'isolement qui lui est imposée et qui doit servir de base aux essais d'isolement prévus par les recommandations.

Section 1 - Transformateurs de courant

101 - Définitions.

Ces définitions seront celles du Vocabulaire Electrotechnique International (Groupe 2? - Section 1?)

101 - a).

Cette définition n'englobe pas le cas du transformateur à rapport de transformation unitaire utilisé pour une question d'isolement.

101 - b) et c)

Il y a lieu de remplacer le mot "[illegible]" par "circuit" qui s'applique aussi bien aux appareils du type "à traversée".

101 - f)

Il est nécessaire de préciser en note que le rapport de transformation doit être indiqué sous forme de fraction non simplifiée, faisant figurer les valeurs nominales.

101 - h).

Remplacer le mot "[illegible]" par "[illegible]".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TECHNICAL COMMITTEE No. 12 : RADIO-COMMUNICATION

SUB-COMMITTEE 12-1 : MEASUREMENTS

Provisional comments of the Netherlands Electrotechnical Committee on Document 12-1(Central Office)7, Recommended Methods of Measurement on receivers for television broadcast transmissions

---

In accordance with the request contained in Document 12-1(Central Office)10, Draft Agenda for the IEC/SC 12-1 Munich meeting, the following Netherlands comments on Document 12-1(Central Office)7 are submitted for discussion at the Munich meeting.

Clause 3.6.2 The text should be replaced by the following which gives a better defined output level for the measurements:

Method of measurement. A television signal in accordance with the standards of the television system used is applied to the input terminals of the receiver via an artificial aerial (see Clause 1,5). The relative levels of the vision and the sound carrier are adjusted to the ratio specified by the standards.

The vision carrier is modulated with a video signal corresponding to a completely white picture. The corresponding sound carrier is 30% modulated with a 400 c/s since-wave (see Clause 9.2).

The sensitivity, contrast and volume controls are adjusted so that standard video output voltage (see Clause 3.1.1) is obtained for a vision input signal level of -50 db(mW) and that the sound output power equals one-half of the maximum useful output power (see Clause 13.2.5)

The input signal level is then varied maintaining a constant ratio between the vision and sound input signal levels) and the output-voltage excussion between black and white as well as the sound output power are measured as a function of the input signal level.

For certain other measurements it is of interest to know the A.G.C. bias voltages of the valves controlled by the A.G.C. circuit as a function of the input signal level.
So it is advisable to measure these voltages at the same time.

The measurements should be repeated with the receiver adjusted in the same way for some other recommended values of input signal level (see Clause 1.6.2)

If the receiver has a "local-distant" sensitivity switch its position should be noted in making A.G.C. measurements.

A check may be made to find out to what extent the vision or the sound A.G.C. characteristics change when the sound or the vision radio-frequency signal is switched off or when their relative levels are changed.

Clause 9.1.3 The last sentence of the first paragraph should be deleted.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO.40: COMPONENTS FOR ELECTRONIC EQUIPMENT

SUB-COMMITTEE 40-2: RADIO FREQUENCY CABLES AND RADIO FREQUENCY CONNECTORS

Reply of the British Committee to Document 40-2(Secretariat)7, Questionnaire concerning the Standardization of waveguides

---

The British Committee has considered Document 40-2(Secretariat)7, Questionnaire concerning the standardization of waveguides, and submits the following comments.

The British Committee is in favour of international standardization of waveguides subject to the comments in sub-paragraphs a. to d. below.

It is however, considered that waveguide matters should be dealt with by a new Sub-committee in view of the r.f. cable and connector commitments of IEC/SC.40-2.

It is proposed that the following items be discussed:-

a. Scope of work. It is considered that the scope should be confined to waveguides and couplings and that waveguide components should not be included in the programme.

b. Rectangular waveguides.

(i) Dimensions of waveguides for general purposes. The dimensions in the attached Table 1 for rectangular waveguides for general purposes are proposed.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.23: ELECTRICAL ACCESSORIES

Report on the Voting under the Two Months Procedure, for the approval of Document 23(Central Office)12: Standardization of rated currents of fuse-links of low-voltage fuses, together with a statement by the Chairman of Technical Committee No.23 on the action to be taken as a result of the voting

---

I. Report on the Voting

Document 23(Central Office)12 was circulated to National Committees on 2nd April, 1955, with a request that the Central Office be informed, within two months, whether or not they were in favour of this document being published as an I.E.C. Recommendation.

The following replies have been received:-

For approval : 12 countries

Finland	letter of	12.5.55	- comments
Argentina	"	18.5.55	
Sweden	"	20.5.55	- comments
Italy	"	24.5.55	
Belgium	"	26.5.55	
Denmark	"	26.5.55	- comments
Netherlands	"	28.5.55	- comments
Switzerland	"	28.5.55	- comments
Yugoslavia	"	1.6.55	
United Kingdom	"	2.6.55	
German Federal Republic	"	6.6.55	- comments
France	"	13.6.55	

Against approval : 1 country

Union of South Africa
letter of 6.6.55

Comments of the Finnish Committee

Referring to the Minutes of the fourth meeting of the CEE Technical Committee on Fuses, CEE(211)G.B. 103/55 we suggest that the fractional ratings 6.3 and 31.5 should be rounded-off to whole numbers.

Comments of the Swedish Committee

The Swedish National Committee is prepared to accept the document but wishes to make the following comments:-

1. For simplicity in marking it is recommended that 6.3 be replaced by 6.
2. For the sake of uniformity and with regard to the Swedish regulations the Swedish Committee may find it necessary to replace the values 31 and 40 by 35 for all types of fuses and not only for D-type fuses.

Comments of the Danish Committee

In submitting the voting paper on Document 23(Central Office)12, we beg to inform you that we have voted for the document to be published as an IEC Recommendation, subject to the following reservation :

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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COMITE D'ETUDES N° 42 : TECHNIQUE DES ESSAIS A HAUTE TENSION

Observations du Comité Français
sur le document 42 (Secrétariat) 1

Le Comité Français présente au sujet du document 42 (Secrétariat) 1 les observations suivantes :

Chapitre I - GENERALITES

11.01 Contournement, Perforation, Amorçage

La rédaction suivante est proposée :

Contournement - Passage d'une décharge disruptive de pôle à pôle soit par un arc jaune ou une étincelle claquante bleue reliant, à l'extérieur de la matière isolante, les pièces métalliques entre lesquelles est appliquée la tension d'essai.

Une étincelle claquante bleue ou un ensemble d'étincelles contournant une portion de l'objet essayé, sans aller de pôle à pôle et n'entraînant pas une augmentation notable du courant débité, ne doit pas être considéré comme un contournement.

Perforation - Passage d'une décharge disruptive de pôle à pôle à travers la matière isolante de l'objet essayé soit directement, soit par un trajet partiellement extérieur.

Lors du contournement d'un isolateur, il peut arriver qu'un petit fragment se détache du bord des jupes; cette détérioration n'est pas considérée comme une perforation.

Nota.- Dans un but de simplification le terme "amorçage" est quelquefois utilisé dans les présentes règles pour couvrir tous les phénomènes généralement décrits par les termes amorçages, contournement, perforation.

11.02 - 11.03 - 11.04 - Le Comité Français demande la suppression de ces articles. Les expressions : niveau de tenue (niveau 0 %), niveau de 50 % d'amorçage, niveau de 100 % d'amorçage et leur définition peuvent prêter à confusion.

11.05 et 11.06 - Il apparait difficile de séparer pratiquement le niveau visible et le niveau audible. Une seule définition serait suffisante. Le Comité Français propose la suivante :

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.22 : POWER CONVERTING EQUIPMENT

SUB-COMMITTEE 22-2 : SEMI-CONDUCTOR RECTIFIERS

Comments of the German National Committee
on Document 22-2(Secretariat)5, Draft Code Designation for
Stacks - Proposal by the Secretariat

The introduction of the I.E.C. Code for the designation of semi-conductor stacks is quite welcome. Above all, it must be abridged and clear and give information about rating, connection and the most important service conditions.

Therefore, we recommend that codes not absolutely necessary for estimating the capacity of being put into operation be renounced. To such codes belong data about special constructive characteristics, such as kind of terminals, etc., which require besides special data by means of drawings, dimension pictures and similar.

According to the comments formulated above, the proposals should be simplified as follows (compare Page 4 of the draft):-

Mechanical assembly can be cancelled. The assignation of fins does not indicate anything of decisive about the rating and capacity of being put into operation. Only the prescribed cooling method is important.

Rated values. Here, we must additionally remark that in case of capacitive load (C), the sign C replaces the rated d.c. voltage. Compare for this purpose the German comments on Document 22-2(Secretariat)3, February, 1956.

Character of load. We recommend, as provided also by German rules, always to refer the rated output only to resistance load. Only in this way, a simple and economical storekeeping is possible. Then the code for character of load becomes unnecessary, too, with the exception of capacitive load stacks.

Cooling method. This indication is necessary. But a simplification and a systematization should be aspired to.

Fastening method. A symbol can fall out being not decisive for the capacity of being put into operation and, besides, further details must be given by drawing.

Type of terminals. Neither this indication is considered by us as absolutely necessary, for additional special data must eventually be given here, too.

Outer polarity. In case of bridge connections, the indication is unnecessary one terminal being always positive, the other one being negative.

In case of centre and star connections, it is better to indicate, whether the centre has a positive or a negative polarity. We propose, the centre C being positive, not to use any symbol or CP and to use a symbol CN in case of a negative centre.

Finish. We estimate the six versions to be too numerous and propose that "Finish for humid atmosphere HF" be deleted. On the other hand

Without finish	no code

should be mentioned in the first place for completeness. If these proposals were complied with, considerable simplifications would result therefrom for the examples 1 to 4.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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COMITE D'ETUDES N° 4 de la C.E.I. : TURBINES HYDRAULIQUES . A I 5

Remarques du Comité Français sur les conditions d'essais des turbines hydrauliques et en particulier sur les tolérances

---

A la réunion du Comité 4 à Philadelphie, il a été proposé que soit inclus dans le code recommandé par la C.E.I. une tolérance sur les rendements mesurés pour tenir compte des inexactitudes inhérentes aux mesures, étant entendu que le mode d'application et la valeur de ces tolérances seraient décidés ultérieurement.

Les propositions suivantes ont été adressées depuis lors :

4(Allemagne)2 - Tendant à expliciter dans chaque cas les erreurs possibles et d'en faire la somme.

4(Suisse)3 - Proposant une tolérance globale de ± 2 %.

4(Secrétariat)1 - Ne demandant aucun changement au code américain (qui ne comporte pas de tolérance) puisqu'un accord n'a pu se faire sur la valeur des tolérances.

Le Comité Français estime qu'il est très important de conserver cette notion de tolérance, mais qu'il n'est pas très logique d'adopter la même tolérance dans tous les cas, la précision des mesures pouvant varier fortement d'un type d'installation à un autre. Toutefois, la proposition allemande parfaitement logique, parait d'une application délicate.

Le Comité Français propose d'adopter une tolérance globale, comprise entre ± 1 % et ± 2 %. Cette tolérance serait fixée d'un commun accord, dans chaque cas, entre les parties lors de la signature du contrat, compte tenu des méthodes de mesure auxquelles les parties ont l'intention de recourir.

Le Comité Français attire par ailleurs l'attention sur le paragraphe 2 de l'appendice f de 4(Secrétariat)1, signalant que la pratique générale aux Etats-Unis est de faire supporter les frais de l'essai par l'acheteur. Il s'agit là d'une question commerciale, qui, suivant les réglements de la C.E.I. ne doit en aucun cas figurer dans un code international.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMITTEE OF ACTION

Replies to the Central Office inquiry on
Document 01(Central Office)240: Draft Recommendations
concerning methods of designing and testing line traps

In August, 1954, the International Conference on Large Electric Systems (C.I.G.R.E.) sent to the I.E.C. a document prepared by its Study Committee No.14 - Teletransmission at high frequency, entitled "Draft Recommendations concerning methods of designing and testing line traps, by A de Quervain", with a request that the I.E.C. should consider the desirability of starting work on this subject.

In accordance with a decision by the Committee of Action in London, in July, 1955, this document has been circulated by the Central Office to the National Committees in September, 1955, with a request for their views on this matter.

The following seven countries have expressed themselves in favour of this work being taken up by a new Technical Committee of the I.E.C.:

Belgium
Denmark
France
German Federal Republic
Japan
U.S.A.
U.S.S.R.

Italy has proposed that the work be included in the scope of T.C.14.

Norway is not in favour of setting up a new Technical Committee. If recommendations are wanted, they could probably be prepared by existing Technical Committees. T.C.12 could take care of the radio-technical side and prepare definitions and methods of measurements of damping and impedances. T.C.11 could prepare specifications for the safety in operation by prescribing test voltages and test currents as well as methods for testing.

The Netherlands consider that this work is not urgent.

The United Kingdom considers that it would not be advantageous to start work on I.E.C. recommendations on this subject.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No.4: TURBINES HYDRAULIQUES

Observations relatives aux projets de Codes suisse et américain
Documents 4(Suisse)1 et 4(U.S.A.)2.

Les propositions 4(U.S.A.)2 et 4(Suisse)1 prescrivent les conditions d'exécution des essais de réception des turbines hydrauliques et imposent en outre certaines clauses à caractère contractuel qu'il est coutume, en France, de discuter au cours de l'établissement des cahiers des charges.

Une distinction a été établie entre ces deux aspects des documents précités.

I - ARTICLES RELATIFS A L'ETABLISSEMENT DES CAHIERS DES CHARGES

En dehors des articles à caractère trop commercial des "Règles pour les turbines hydrauliques" (délais de garantie des machines, articles 34 à 36, répartition des frais des essais, etc...) que nous souhaiterions voir écartés, les points ci-dessous relatifs aux clauses techniques des cahiers des charges, appellent les observations suivantes:

a - Détermination de la puissance nominale pratique (4(Suisse)1 art.29)

Cet article pourrait avantageusement être précédé de la mention "Sauf spécification contraire du cahier des charges...."

b - Puissance et débit prélevés par le régulateur (Art. 12 et 13 de 4(Suisse)1 et 15 du projet 4(U.S.A.)2).

En toute rigueur le débit d'eau nécessaire au refroidissement du régulateur et la puissance d'entraînement de cet organe et d'une manière générale tout débit ou puissance nécessaires au fonctionnement normal de la turbine et de ses accessoires pourraient être laissés d'une manière générale à la charge du constructeur de cette machine. En tout cas le constructeur devra donner les puissances et débits maxima et moyens nécessaires pour le bon fonctionnement de la turbine.

c - Tolérances de mesure

Les tolérances de mesure font l'objet d'une proposition séparée de la Délégation Française.

d - Révision des machines avant les essais

S'il paraît logique de permettre au constructeur de procéder à une révision de son matériel et au remplacement éventuel des parties mécaniques dont l'usure anormale serait préalablement reconnue par le maître de l'oeuvre, il y a lieu toutefois d'apporter une restriction à ce droit pour les organes intéressant la sécurité de la machine. En particulier, le régulateur devrait supporter les essais, sans révision préalable autre que celle correspondant à un entretien

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No.4: TURBINES HYDRAULIQUES

Mesure des pertes d'un alternateur
à partir de l'échauffement du fluide de refroidissement

---

1 - AVANTAGES DE LA METHODE "D'ECHAUFFEMENT"

Parmi les méthodes de mesure des pertes d'un alternateur, celle utilisant l'échauffement du fluide de refroidissement de cette machine est l'une des plus précises.

- Les mesures d'échauffement ont une sensibilité excellente et une précision très supérieure à celle généralement admise dans la détermination des tolérances.

- Les pertes mesurées se produisent dans des conditions identiques à celles correspondant à la marche normale. Il n'en est pas de même pour les autres méthodes. En particulier, dans l'essai en court-circuit, utilisé dans la méthode de ralentissement, les harmoniques de la courbe de flux parasite pénétrant dans les paquets de tôles d'extrémité, normalement au plan de laminage, et qui se forment par la frette du rotor, peuvent modifier sensiblement la valeur des pertes supplémentaires. De même, les pertes électriques obtenues par la méthode de ralentissement doivent faire l'objet d'une correction, d'ailleurs difficile à estimer, pour tenir compte de l'influence de la température des enroulements, cette correction est inutile pour la méthode d'échauffement.

Elle permet de tenir compte de toutes les pertes, en particulier de celles qui se produisent par frottement dans les paliers et pivots, ainsi que des pertes par ventilation de l'alternateur.

La méthode dite d'échauffement est en outre l'une des plus commodes d'emploi.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES N° 4 : TURBINES HYDRAULIQUES

La Méthode Thermo-dynamique de Mesure
des Rendements des Turbines Hydrauliques

Dès 1914, M. POIRSON imagina une méthode de détermination des rendements des turbines hydrauliques, basée sur la mesure des variations de température de l'eau entraînées par les pertes, mais les premiers essais et les premières publications techniques de cet auteur furent faites en 1921, en collaboration avec M. BARILLON. Seuls quelques expérimentateurs suivirent ses traces et appliquèrent la nouvelle méthode dans un certain nombre de cas.

Les moyens relativement sommaires employés, (notamment l'utilisation de thermomètres à mercure) ne permirent pas d'en obtenir toute la précision possible; son domaine d'utilisation se trouva donc restreint à des chutes élevées et sa diffusion resta longtemps étroitement limitée.

C'est relativement récemment, (en 1952) que les techniciens du Service de la Production Hydraulique d'ELECTRICITE DE FRANCE décidèrent d'étudier à fond les possibilités de cette méthode, d'une part en examinant de plus près ses bases théoriques, d'autre part en réalisant un appareillage de mesure spécial, parfaitement adapté à son objet et bénéficiant de tous les progrès des techniques modernes.

Dans ses modalités actuelles d'emploi par ELECTRICITE DE FRANCE, la méthode de détermination des rendements des turbines hydrauliques, basée sur les variations de température de l'eau dues aux pertes, diffère sensiblement de celle qui était appliquée par ses prédécesseurs; aussi est-elle maintenant baptisée non plus "méthode thermométrique", mais "méthode thermodynamique".

L'application correcte de la méthode fait en effet appel aux principes de la thermodynamique qui interviennent dans la détente d'un fluide élastique fournissant un travail extérieur.

En pratique, le mode opératoire est maintenant le suivant :
L'eau prélevée dans la manchette d'alimentation de la turbine essayée, ou dans la conduite forcée, est détendue, sans échange énergétique avec l'extérieur, sous un débit permanent d'environ 0,1 litre seconde, dans une enceinte calorifugée dans laquelle plonge une jauge thermométrique à résistance de platine. Cette jauge est comparée au moyen d'un pont de WHEATSTONE, à une deuxième jauge thermométrique identique plongée dans l'eau du canal de fuite. Le réglage du pont, pour l'égalité de température des deux jauges, est connu par une mesure préalable où celles-ci sont plongées dans une même eau à température parfaitement uniforme.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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COMITE D'ETUDES N° 4 de la C.E.I. : TURBINES HYDRAULIQUES

Note du Comité Français
sur la garantie de bonne tenue des roues

Le Comité Français rappelle qu'en dehors des méthodes d'essais, la C.E.I. a vocation pour recommander toutes mesures tendant à rendre les matériels comparables.

En matière de turbines hydrauliques, une question très importante est la garantie de bonne tenue de la roue. Le Comité Français souhaiterait que cette question soit portée à l'ordre du jour d'une prochaine session pour qu'on puisse dégager la tendance internationale en matière de durée de garantie des roues et sur le critère à adopter pour juger de la tenue des roues en service.

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29-6(Secretariat)1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No.29 : ELECTRO-ACOUSTICS

WORKING GROUP No.6 : HEARING AIDS

4- SEP 26
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Proposed
Methods for Measurement of the Electro-acoustical
Characteristics of Hearing Aids (Third draft)

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1. SCOPE AND PURPOSE

1.1 - The purpose of the this standard is to describe practicable and reproducible methods of determining certain physical performance characteristics of air conduction hearing aids using electronic amplification and insert type earphones. The methods specified here give information on the measurement of:-

Characteristic of the gain control
Frequency response of the hearing aid
Effect of gain control positions on frequency response
Effect of tone control positions on frequency response
Saturation sound pressure level in the coupler
Maximum acoustic gain
Effect of battery voltage variation on acoustic gain
Frequency response of the earphone
Characteristic of the automatic gain control
Rated maximum sound pressure level in the coupler
Effect of battery voltage variation on non-linear distortion
Random noise from the hearing aid
Case noise
Battery current

1.2 - The acoustical test procedure is based on the free field technique, in which the hearing aid is placed in a plane progressive wave with the earphone coupled to a standardized coupler.

1.3 - Unless otherwise specified all measurements are carried out without using an ear insert (ear mould), which is normally to be regarded as incorporated in the coupler or the artificial ear employed (see 3.4).

1.4 - The results obtained by the methods specified herein express the performance under the corresponding conditions of the test, but will not necessarily agree exactly with the performance of the hearing aid under practical conditions of use. For this reason the difference between practical and test conditions must be borne in mind in interpreting the test results.

2. DEFINITIONS

2.1 - Coupler. A coupler is a cavity of predetermined shape which is used for the loading of earphones. It is provided with a microphone for measurement of the pressure developed in the cavity.

2.2 - Substitution Method. A method of measurement of the response of a hearing aid in which the hearing aid, and the microphone employed to measure the free field sound pressure, are placed alternately at the same point (the test point) in the sound field.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

COMITE D'ETUDES No 16 : MARQUES DES BORNES ET AUTRES MARQUES D'IDENTIFICATION.

2 - SEP 26
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Observations du Comité Electrotechnique Suisse relatives au Document 16(Secrétariat)205: Marques de repérage des conducteurs isolés.

Le Comité National suisse est en principe d'accord que les marques de repérage des conducteurs isolés permettent de se rendre compte des appareils qu'ils relient. Il estime toutefois que les abréviations à utiliser sur les câbles devraient être aussi simples que possible et ne pas être fixées par ce document.

En conséquence, il y aurait lieu de supprimer l'article 6, Repères complémentaires. Au cas où des couleurs de repérage seraient recommandées dans ce document, elles devraient absolument concorder avec celles qui figurent dans le document 16(Bureau Central)3, c'est-à-dire qu'il faudrait également introduire la couleur noire pour les conducteurs de mise à la terre.

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COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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COMITE D'ETUDES No 16 : MARQUES DES BORNES ET AUTRES MARQUES D'IDENTIFICATION.

Observations du Comité Electrotechnique Suisse relatives au document 16(Secrétariat)206: "Proposition du Secrétariat concernant la marquage des bornes et la marquage de position des appareils de manoeuvre à fonctionnement à main.

Le Comité national Suisse se permet de réitérer au sujet de ce document la remarque que son délégué a formulée lors de la réunion du Comité d'Etudes n° 16, à Londres, du 28 au 30 juin 1955. Selon le compte rendu R.M. 392, page 11, cette remarque est la suivante :

"M. SURBER propose que tous les appareils de manoeuvre soient discutés et non pas seulement ceux fournis sans un schéma, par exemple relais, contacteurs, interrupteurs d'ouverture et de fermeture, etc. Le Comité suisse propose par exemple l'usage de nombres pour les bornes conduisant à des contacts et de lettres pour les bornes conduisant à des enroulements, à condition que les bornes des circuits principaux soient désignées par les symboles fixés pour les phases.".

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 16: TERMINAL MARKINGS AND OTHER IDENTIFICATIONS

Comments by the British Committee on the procedure at present followed in T.C. 16

Since the London meeting of T.C. 16, the Secretariat has circulated a number of drafts either for comment of for approval by the National Committees under the Six Months Rule.

Preliminary examination of the proposals indicates that only one of these is likely to prove generally acceptable to the British Committee and it is noted that in this case, namely, Terminal markings for instrument transformers, there was detailed discussion in a joint Sub-Committee (16/38)

The British Committee records its regret that a similar procedure is not being adopted in all cases before the draft Recommendations are submitted for approval under the Six Months Rule as they are of the opinion that, only by consultation with the I.E.C. Technical Committee responsible for the relevant apparatus, will terminal markings be formulated in T.C. 16 that are likely to be widely adopted by the National Committees.

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